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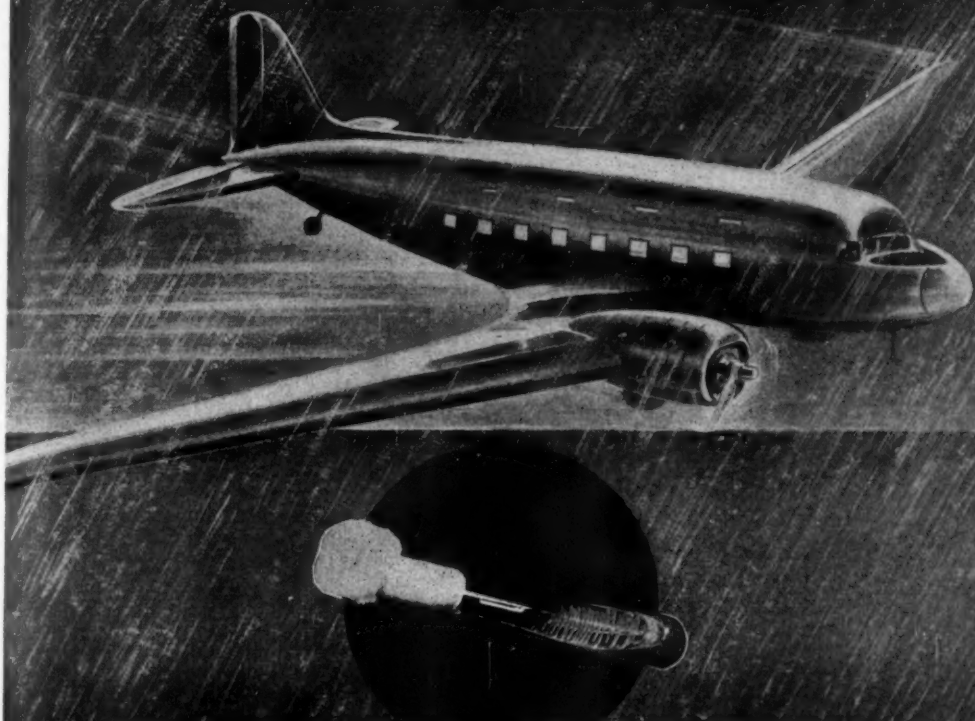
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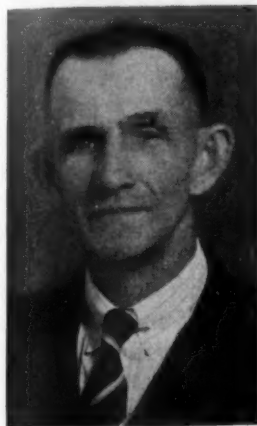
VOL. CI

DECEMBER 1942

NO. 789

## Celebrating the Birth of an Achievement: Eradication of Bovine Tuberculosis in the United States

(An Editorial)



**I. S. McAdory**  
President, U. S. Live Stock  
Sanitary Association

HOW TIME FLIES! At its forty-sixth annual meeting, Dec. 2-4, 1942, the United States Live Stock Sanitary Association celebrates the twenty-fifth anniversary of coöperative bovine tuberculosis eradication work among American cattle which was planned, initiated, and carried out under the directive of the Tuberculosis Eradication Division, Bureau of Animal Industry, United States Department of Agriculture—a division organized for that purpose, May 1, 1917.

The country was at war hastily preparing to send a legion of armed forces to Europe when in December of that year the task was launched.

Woodrow Wilson was President of

the United States, David F. Houston, of North Carolina, was Secretary of the Department of Agriculture, and A. D. Melvin, Chief of the Bureau of Animal Industry. The objective was to reduce the percentage of tuberculous cattle in the United States below the level of one half of one per cent. That goal line was crossed Nov. 1, 1940, or 23 years later, when the last two nonaccredited counties on the Pacific Coast were officially declared "modified accredited areas," the official name for zones cleaned up to the stated level.

The Tuberculosis Eradication Division,



**Mark Welsh**  
Secretary, U. S. Live Stock  
Sanitary Association

established in 1917, was created from the Quarantine Division, famous for its successful handling of foreign and domestic livestock plagues since 1891: contagious pleuropneumonia, foot-and-mouth disease, hog cholera, scabies, Texas fever, dourine, glanders. If these deadly enemies of farm animals can be mastered, why not tuberculosis was obviously *l'esprit de corps* when the zero hour for the drive against bovine tuberculosis arrived. Applied to preventive medicine, *eradication* is a strong word, perhaps a bit boastful, yet as a slogan for battle against a foe as securely entrenched



into our dairy cattle as was Koch's bacillus in the pre-eradication period, no better word could have been chosen as the battle cry. The old Quarantine Division of the Bureau of Animal Industry adopted that word already in its fights of the 1890's, and it was still on the banner unfurled by Mohler, Kiernan and Wight in 1917. Proofs of this are found in the work and writings of predecessors who had cleared the way for the campaign against tuberculosis which this generation of livestock sanitarians now stops to celebrate.

*Eradication* is a trade mark of veterinary prophylaxis in this country even though the end it implies can never be reached in the true sense of the word; and therein lies a warning of which we shall speak later.

The period from 1891 to 1917 was 26 years of argument, education, and preparation. The magnitude of the animal-tuberculosis problem was comprehended by few. Veterinarians of the rank and file, interested mainly in horses and mules of the streets and farms, paid scant attention to the erosion of bovine tuberculosis, and our well-fed population was not easy to arouse to the point of lending wholehearted support to its eradication.

#### BOVINE TUBERCULOSIS BEFORE 1917

There is at least academic value in the dispute over who made the first tuberculin test in the United States. Houck<sup>1</sup> gives the credit to Leonard Pearson, dean of the School of Veterinary Medicine, University of Pennsylvania, and sets the date at March 3, 1892 when he (Pearson) made the amaz-

ing announcement that tuberculin he had brought over from Germany had shown that a herd of 79 purebred Jersey's at Villa Nova was 38 per cent tuberculous. Others<sup>2</sup> accord the credit to John Faust, a private practitioner, of Poughkeepsie, N. Y., who on May 19 and 20, 1893 conducted a tuberculin test that condemned as tuberculous 30 cows out of a herd of 34 (89%), and published what appears, in American periodical literature, to be the first tabulated report<sup>3</sup> of a carefully conducted tuberculin

test in American cattle. The tuberculin used was furnished by the pathological laboratory of the United States Bureau of Animal Industry, which in itself is a historical fact worth pointing out. The high percentage of tuberculous cows indicated by Faust's test was confirmed *post mortem* by the New York State Board of Health. Bovine tuberculosis eradication, therefore, dates back to these two tests of 1892 and 1893—50 years ago.

The remarkably high incidence of tuberculosis in the cows of these two

herds aroused interest in bovine tuberculosis in the form of comments in the lay press; and they led also to no end of mud-slinging among veterinarians in official positions, some of whom, apparently, were hearing of tuberculosis for the first time. The disease in man was best known as *consumption*. This writer recalls how some state officials,



John R. Mohler

Chief of the "Bureau" who commanded the campaign of bovine tuberculosis from inception to end.

<sup>1</sup>The Bureau of Animal Industry by U. G. Houck, 1924, p. 349.

<sup>2</sup>Veterinary Military History of the United States by L. A. Merillat and D. M. Campbell, 1935, p. 304.

<sup>3</sup>Faust, John: Tuberculin as a Mean of Diagnosis, Am. Vet. Rev. xvii (July, 1893), pp. 174-183.



who themselves were shifted like pawns with each election, called the Bureau veterinarians "meddling politicians who were hurting the milk business," notwithstanding that so far as tenure of office was concerned, political upheavals never changed the Bureau personnel—and therein lies the pattern for civil service which all state, federal, and private veterinarians venerate.

In 1901, as evidence of the high percentage of tuberculous cows in the milk sheds of the larger cities accumulated, Russell and Hastings of the Wisconsin Agricultural Experiment Station made a startling report<sup>4</sup> to the effect that the tuberculin test was showing an incidence of bovine tuberculosis in: (See table I)

In institutional herds, the situation was staggering, in fact, as of 1942, the figures seem unbelievable: (See table II)

Institutional herds in Texas, New Mexico, Louisiana, Ohio, Colorado, Kansas, Illinois, Connecticut, New Jersey, all showed an appalling tuberculosis situation. In the same year, Pearson and Ravenel reported an in-

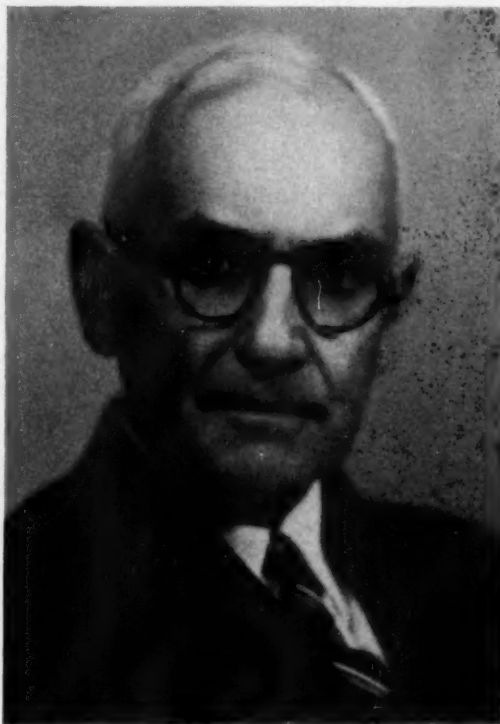
cidence of tuberculosis of 80.8 per cent out of 599 cattle they tested, and the rate of infected hogs increased 1 per cent annually from 1907 to 1917 according to official reports.

In 1917, the Meat Inspection Division found 218,926 tuberculous cattle out of 9,299,487 slaughtered<sup>5</sup>. During the same year, 3,978,168 hogs out of 40,217,847 showed tuberculosis lesions. For the whole country, one cow out of 20 was tuberculous<sup>5</sup>.

Briefly, these figures sum up the tuberculosis problem that led to the coöperative plan of eradication which American livestock sanitarians gather in convention to celebrate.

The actual beginning of regional eradication was started with the District of Columbia as the "guinea pig." The basis was no doubt the high percentage of tuberculous cows in the government institutions: 84.1 per cent at the Soldier's Home and 77.0 per cent at the Government Hospital for the Insane. Hadn't Chief Salmon em-

(Turn to page 463)



Alexander E. Wight

Chief, Tuberculosis Eradication Division, U. S. B. A. I.

<sup>4</sup>U. G. Houck, *ibid.*

<sup>5</sup>Keeping Livestock Healthy, USDA, 1942, and U. G. Houck, *ibid.*

TABLES I and II.—Bovine tuberculosis at the turn of the century: eight states and institutions.

|                     |       |                                     |        |
|---------------------|-------|-------------------------------------|--------|
| Massachusetts ..... | 50.0% | Maine State Agricultural College... | 100.0% |
| Wisconsin .....     | 35.6% | Soldiers' Home, Washington, D. C. . | 84.1%  |
| New Jersey .....    | 21.4% | Wisconsin Agr. Experiment Station.  | 86.6%  |
| New York .....      | 18.4% | Massachusetts Agricultural College. | 78.1%  |
| Illinois .....      | 15.3% | Utah Agricultural College.....      | 72.2%  |
| Pennsylvania .....  | 14.1% | Government Hospital for the Insane, |        |
| Iowa .....          | 13.8% | D. C. ....                          | 77.0%  |
| Minnesota .....     | 11.1% | Vermont Agricultural College.....   | 63.6%  |
|                     |       | N. Y. Agr. Experiment Station       |        |

## Anniversary of the Birth of Bovine Tuberculosis Eradication Commemorates the Work of the Second Chief of the "Bureau"



**Alvonzo Doris Melvin**

**(1862-1917)**

Dr. A. D. Melvin, native of Illinois, second chief of the Bureau of Animal Industry, United States Department of Agriculture, spent his whole professional life in Bureau work from the time of graduating at the Chicago Veterinary College in 1886 to the date of his death in December, 1917. During the 58 years since the Bureau was founded, D. E. Salmon served as chief for 21 years, A. D. Melvin for 12 years, and J. R. Mohler for 25 years. While each of these left "footsteps in the sands of time" in the making of the United States of 1942, the administration of Melvin stands out as the period when (1) tick eradication was started, (2) the veterinary schools were investigated and graded, (3) serum-virus vaccination of hog cholera was discovered and instituted, (4) foot-and-mouth disease was twice exterminated, and (5) cooperative bovine tuberculosis control was established. It was in the 'teen decade that Chief Melvin and Assistant Chief Mohler planned and nationalized the latter project. In the face of absence of public interest, lack of encouragement from the medical profession, and an attitude ranging from dubious to hostile in the agricultural circle, inducing Congress to enact the necessary laws and appropriate the necessary funds to launch tuberculosis eradication was, indeed, an achievement.

phasized that "When public sentiment favors tuberculosis eradication, the task will not be found an impossible one." The response to this first effort to eradicate bovine tuberculosis on geographic lines was striking. From 1910 to 1917, the disease in the District was lowered from 18.87 per cent to 0.84 per cent and by 1922, the figure was 0.17 per cent. Fact had replaced presumption. Area eradication was feasible.

To avoid confusion, it must be set down here that 1942 is the twenty-fifth anniversary of *Federal-State Coöperative Tuberculosis Eradication*. In other words, the anniversary of the moment when Chief A. D. Melvin created the Tuberculosis Eradication Division and delegated John Kiernan and Alexander Wight to carry out the project—1917. Dr. Melvin, already in ill health, did not live to see the fruits of his foresight. Chief Mohler took over in December of that year and, therefore, was in command during the 23 years required to finish the job.

It would be unjust to renounce the steps which led up to the historic start of 1917:

- a) The early work of Pearson, Faust, and others.
- b) Dr. Salmon's doctrine of educating the public.
- c) Enactment of livestock sanitary laws in the states.
- d) Example set in the District of Columbia.
- e) Municipal laws rejecting milk of non-tested cows.
- f) O. E. Dyson's accredited-herd plan.
- g) Restriction on interstate shipment of tuberculous animals.
- h) Support by veterinary societies and journals.
- i) D. E. Luckey's demonstrations on intradermal reactions.

It is regrettable to have to recall that, excepting for health officials, tuberculosis eradication did not receive much attention in the councils of the medical profession until eradication was a *fait accompli*.

After Congress had consented to appropriate \$75,000 for the purpose, available July 1, 1917, and John A. Kiernan had been appointed chief of the new division and Alexander E. Wight, assistant chief, field offices were established at:

Springfield, Mass.  
Indianapolis, Ind.  
Salt Lake City, Utah.

Richmond, Va.  
St. Paul, Minn.  
Portland, Ore.



John A. Kiernan

John A. Kiernan, first chief of the Tuberculosis Eradication Division of the U. S. Bureau of Animal Industry, is recalled as a keen, fair-minded, persuasive diplomat who successfully coördinated all agencies involved in the gigantic undertaking. He died when the work was in full sway and its completion was but a matter of a few years.

By 1922, more than 40 such offices had been opened for work throughout the East, South, North and West, each directed by a capable veterinarian of the Bureau force. Thus, there was formed a powerful army of disease fighters composed of federal and state veterinarians who were later aided by part-time accredited veterinarians who were called upon when and where needed to carry out the project. The public was beginning to comprehend that the campaign was a fight against a menace to public health—the great white plague—and also an effort to remove an obstacle of the first rank to the profitable raising of farm animals.

The first five years may be singled out as a period devoted to the slow but essential task of shaping the public conscience; of obtaining the coöperation of livestock societies; and of encouraging state partici-



pation through legislation, including the appropriation of funds for the payment of indemnities to match those of the federal government. That there would be criticisms, and opposition to overcome, was expected. Certifying the health of 65,000,000 cattle, 62,000,000 hogs, and 500,000,000 head of poultry in 48 states involved many persons and many interests. So, in paying homage to the veterinary service for undertaking the task ahead, the diplomacy and perseverance of Mohler, Kiernan, and Wight from 1917 to 1922 must forever be acknowledged in view of the industries touched and the political make up of the United States. The cattle-producing and the dairy industries, and the ecologic factors involved were multiple and vast. These facts, coupled with the public's vague understanding of its purposes, combine to make bovine tuberculosis eradication the most daring offensive ever launched against a disease of higher life. To celebrate the silver anniversary of its birth is, therefore, a fitting tribute to the foresight and courage of American veterinarians and livestock sanitary officials—an example of putting science to work for the benefit of the nation's wealth and the health of its people. It is likewise a tribute to Robert Koch's historic discovery of 1882 and to the early veterinarians who seized "Koch's lymph," as a reliable means of detecting the tiniest tuberculous lesion in animals.

#### PROGRESS CONVINCING

While there is no space here for the many tabulations showing precisely the number of animals tested and disposed of in each state and each year, a few figures sketching the progress made from start to finish are inescapable in attempting to paint the picture of bovine tuberculosis in the United States preceding cooperative eradication.

In 1901, according to an investigation conducted by Russell and Hasting, cited by Houck<sup>1</sup>, the percentage of tuberculous cattle, mainly dairy cows, in eight principle states showed an average incidence of 22.2

per cent. The highest figure for the eight states reported was 60 per cent (Massachusetts), and the lowest, 11.1 (Minnesota). In the eight institutional herds, the percentage was 77.1 per cent. The highest rate for these institutions was 100 per cent (Maine) and the lowest 55.5 per cent (New York). The following is a tabulation of the prevalence of bovine tuberculosis compiled to show the contrast between 1901 and 1942: (See table III)

TABLE III.—Contrasts.

|                     | 1901<br>% | 1942<br>% |
|---------------------|-----------|-----------|
| Massachusetts ..... | 50.0      | 0.24      |
| Wisconsin .....     | 35.6      | 0.13      |
| New Jersey .....    | 21.4      | 0.33      |
| New York .....      | 18.4      | 0.26      |
| Illinois .....      | 15.3      | 0.21      |
| Pennsylvania .....  | 14.1      | 0.32      |
| Iowa .....          | 13.8      | 0.46      |
| Minnesota .....     | 11.1      | 0.15      |
| Average .....       | 22.2      | 0.25      |

While the 1901 column represents cattle in "tuberculous centers" and the other scattered herds in the states named, the figures are nevertheless revealing and morally impressive.

In regard to the institutional dairy herds of 1901, which show an average incidence of nearly 80 per cent of tuberculous animals, the contrast is still more emphatic, since institutional herds at the present time are practically all nontuberculous. As a matter of fact, a single tuberculous cow in most of this class of dairy herds would be as surprising in 1942 as the high percentage was staggering in 1901.

Another insight to the ground gained since 1917 are the official tables of the Bureau of Animal Industry showing the relative number of cattle carcasses retained or condemned by the Bureau meat-inspection forces on account of tuberculosis. The table covering the period 1916-1941 [to which Chief Wight adds the figures for 1942] shows that 2.35 per cent of bovine



carcasses federally inspected were retained and 0.53 per cent condemned and sterilized in 1916. In 1917, the figures were 0.06 per cent retained and but 0.016 condemned and sterilized. [Reactors to the tuberculin test are not included in these figures.] The number slaughtered under federal inspection in 1916 was 7,367,681 and in 1942, 11,743,466—figures sufficiently large for both years to tell the true story of the vanishing plague, as shown by the gradual decline in retentions and condemnations by the Bureau meat inspectors. See the following table:

TABLE IV.—Progress of bovine tuberculosis eradication shown in the declining incidence of the disease.

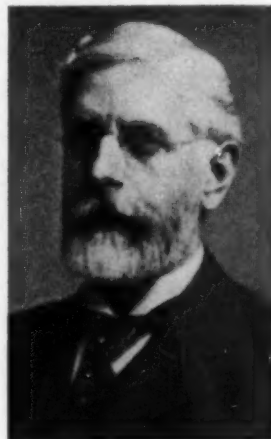
| FISCAL<br>YEAR | CATTLE<br>TESTED<br>1000 | REACTIONS   |      |
|----------------|--------------------------|-------------|------|
|                |                          | No.<br>1000 | %    |
| 1917 .....     | 20                       | 0.6         | 3.2  |
| 1918 .....     | 134                      | 6           | 4.9  |
| 1919 .....     | 329                      | 13          | 4.1  |
| 1920 .....     | 700                      | 28          | 4.1  |
| 1921 .....     | 1,366                    | 53          | 3.9  |
| 1922 .....     | 2,384                    | 82          | 3.5  |
| 1923 .....     | 3,460                    | 113         | 3.3  |
| 1924 .....     | 5,312                    | 171         | 3.2  |
| 1925 .....     | 7,000                    | 214         | 3.1  |
| 1926 .....     | 8,650                    | 323         | 3.7  |
| 1927 .....     | 9,700                    | 285         | 2.9  |
| 1928 .....     | 11,281                   | 262         | 2.3  |
| 1929 .....     | 11,683                   | 206         | 1.8  |
| 1930 .....     | 12,845                   | 216         | 1.8  |
| 1931 .....     | 13,782                   | 203         | 1.5  |
| 1932 .....     | 13,443                   | 254         | 1.9  |
| 1933 .....     | 13,073                   | 255         | 2.0  |
| 1934 .....     | 15,119                   | 232         | 1.5  |
| 1935 .....     | 25,237                   | 376         | 1.5  |
| 1936 .....     | 22,918                   | 165         | 0.7  |
| 1937 .....     | 13,750                   | 94          | 0.7  |
| 1938 .....     | 14,108                   | 89          | 0.6  |
| 1939 .....     | 11,186                   | 60          | 0.5  |
| 1940 .....     | 12,222                   | 56          | 0.46 |
| 1941 .....     | 12,229                   | 40          | 0.2  |
| 1942 .....     | 10,983                   | 25          | 0.26 |
| Total .....    | 252,926                  | 3,836       | 1.5  |

Abridged table of USDA.

#### PAID BIG DIVIDENDS

The task of eradicating bovine tuberculosis to the objective level in 3,071 countries, Puerto Rico and the Virgin Islands, as the table shows, required the testing of 252,926,000 head of cattle. It was a major

operation, painless but difficult. The farmers were well paid for the animal condemned by the field inspectors and besides received around \$60,000,000 of free veter-



Daniel Elmer Salmon

(1850-1914)

Chief of the Bureau 1884-1905 who said "It can be done."

inary service, not computing the saving through loss prevention amounting to fabulous figures—dividends of the past, present and future. Moreover, from 1917 to 1942 the mortality of human tuberculosis declined from 150 per 100,000 to 50 per 100,000. To this favorable trend, coöperative bovine tuberculosis eradication is accorded considerable credit. In so far as reducing the occurrence of bone, joint, and intestinal tuberculosis in the young and adolescent, the veterinary service is conceded by high authorities to have made a worth while contribution to the health of the American people.

#### WHAT OF THE FUTURE?

While stressing the low level to which animal tuberculosis has been reduced since 1917, it is more important to signalize the constant vigilance that will always be required to hold the ground won. In this respect, the word *eradication* is misleading to the nonmedical mind, but in the councils of the veterinary service, the potentiality lurking in the remaining  $\frac{1}{2}$  of 1 per cent

tuberculous cattle is understandable and not under-estimated nor overlooked. No relaxation of control measures is sanctioned nor anticipated by the veterinary service. On the contrary, it is realized that a resurgence of the disease, if left untouched, would spread Koch's bacillus more swiftly than it was uprooted. Tuberculosis is an insidious malady, ubiquitous throughout the world, and furthermore, the loss of any specific immunity cattle may have acquired in their previous tuberculous environment, is also kept in mind in the effort to hold the advantage gained.

The *salaam* to coöperative bovine tuberculosis by the United States Live Stock Sanitary Association is as instinctive as keeping that subject uppermost in mind at each of its annual sessions. So, we join in saluting the effort and the tireless workers who proved that Dr. Salmon was right when he declared that the job could be done.

#### EPILOGUE

That the strength of the United States which is now drawn upon to fight for freedom in all parts of the world of '42 grew from, and now depends upon, the work of the veterinary service has little chance of making the headlines, although such headlines running across the front page would bear up against the searching analysis of the keenest mind.

If the operations of veterinary science has become somewhat more comprehensive to more and more people through the sobering effect of U-boats, airplanes and food rationing, the general population (plebes, statesmen, intelligentsia) is a long way from being convinced that the bigness of things American grow out of a little-known matrix—the suppression of farm-animal diseases.

The country's largest and most precious possession as of 1942 is the domestic animals of the farm and ranch. That much is easily proved. One has but to count noses and compute market values. But, the story of "what would have been" without the disease-fighting constabulary called

the veterinary profession, was never written in rhetoric powerful enough to impress the people.

The eloquence of Paul de Kruif didn't "take." Even Babbitt's *vision* seems to be lacking, or perhaps, ours is a population of too many Babbitt's.

Offensively boastful as it is for veterinarians to remind the American people that they are skating on the thin ice of animal-disease control, and that whatever they have enjoyed in their proverbial pursuit of happiness is owed to the large population of healthy farm animals which disease would quickly diminish to a dangerous level but for the watchful labors of the veterinary service, we risk this blast of our trumpets from time to time.

But in this hour of emergency, the fanfare is sounded as a patriotic obligation—as a timely warning that the source of our country's power, like the strength of Samson, is being overlooked by the *Philistines*. To our officials, from the President of the United States down to the town constable, our plea, based upon facts of American history, is to get whole-heartedly behind the fighters of farm-animal diseases, their schools, their laboratories and their practicing personnel. The effort may save our country from perishing from the earth, since careless attention to animal disease can do just that quicker than our present population appears to believe.

#### THE SOURCES OF POWER

Ahead of making guns, airplanes, ammunition and ships, a nation's strongest entrenchment lies:

- (1) In good food in ample amounts;
- (2) in good health of its population;
- (3) and in good transportation on highways and railroads.

With all three or any one of these defensive parapets out of a national defense program, no amount of industrial activity could save this or any other country from unconditional surrender to the will of the conqueror. If such a débacle is not in sight to the masses, it is within the horizon to

the eyes of the veterinary service which comprehends what diseases of animals can do to a nation such as ours. Obviously, organized medicine realizes the lurid facts. The medical profession through its solid organizations points to public health as the bulwark of a good national defense just as organized veterinary medicine sees a sad tomorrow that would find us rationed for milk and bread and meat and sugar, and just as the masters of transportation envisage glutted lanes of travel blocking equitable distribution of the people's daily needs. The European situation of today can not be absolved with a wave of the hand.

What appears to be clear is that national defense should not overlook the forces engaged in fighting the diseases of domestic animals for therein lies the future of an agricultural nation whether at peace with the world or defending itself against invasion.

The plain duty of the veterinarians of the United States is to build up their organizations and to proffer them as sources of information to the people as to their dependence upon the nation's domestic animals—their main source of sustenance, which only a sufficient veterinary service can protect. Animal diseases, not scientifically handled, can quickly wreck the best national defense statesmen can erect. If the veterinary profession lacks age and numbers, the responsibilities delegated to it are not correspondingly trivial, and this fact is but another reason for working all the harder to accomplish the ends to which our organizations are dedicated.

The World War gave us a better veterinary educational system and an excellent skeleton for a veterinary corps, and it augmented and propped up the federal and state livestock sanitary services. Organized veterinary medicine was one of the agencies responsible for these improvements. In the present gigantic preparation for an adequate national defense, strong organizations are essential, since only these can safeguard what was won and govern the developments of the coming years.

### Bovine Tuberculosis in Germany

In 1939, the bovine population of Germany was 22 million head, in which 1 million cases of tuberculosis were observed at the abattoirs, in addition to 46,000 cases detected by the Ostertag scheme (diagnosis of open tuberculosis). The annual loss from bovine tuberculosis was estimated to be from 250 to 350 million marks. A survey (tuberculin test) made in 1937 showed that the incidence of tuberculosis was 31 per cent in 412,000 cattle tested. Since then, new plans of control have been instituted.—*Excerpt from the Veterinary Record, Oct. 3, 1942.*

Minister of Agriculture Pierre Caziot, of unoccupied France, appealed to the farmers to use all their ingenuity to increase the output of farm products in order to avoid the worst of its rationing problems, meaning in practical terms, the production of food for despoilers of their country.

### Victims of War

One of the main victims of the war is the weekly newspaper, says the *American Press*. Cause: loss of advertising patronage from the automotive industry—garages, gas stations, parts dealers, and others. While some of the loss is made up by prosperity of the food stores, these do not find it profitable to patronize the weeklies. A remedy suggested is for the government to pay for advertising war bonds. The weekly newspaper is said to be a powerful unit of the American scheme.

Buying Defense Savings Stamps and Bonds makes you a partner in a big undertaking.

No election 'til 1944! So, get down to the business of fighting against a set of crafty enemies, using "what it takes" to do the job—intelligence, courage, sacrifice, and horny hands.



## Human Tuberculosis of Bovine Origin in England and Scotland

Reliable statistics on the incidence of the human and bovine types of tuberculosis in man are lacking because there is no dependable clinical test for making the differentiation. The two types of tuberculin do not produce diagnostically different reactions. That question has probably been closed prematurely through the dogmatic teachings of Calmette. Although only laborious bacteriological investigations suffice to make the differentiation, there is, however, no lack of statistical material on that aspect of the subject. Investigations have shown that the incidence of the bovine type is higher in Scotland than in England. The following compiled by Griffith in 1937, summarizes the findings:

| Percentage<br>of cases infected<br>with the bovine<br>type of bacillus |                    |                  |               |             | Percentage<br>of cases infected<br>with the bovine<br>type of bacillus |                    |                  |               |             |
|--|--------------------|------------------|---------------|-------------|--|--------------------|------------------|---------------|-------------|
| Variety of<br>tuberculosis   | Number<br>of cases | Under<br>5 years | 5-15<br>years | All<br>ages | Variety of<br>tuberculosis   | Number<br>of cases | Under<br>5 years | 5-15<br>years | All<br>ages |
| ENGLAND  |                    |                  |               |             | SCOTLAND   |                    |                  |               |             |
| Cervical gland   | 126                | 90.9             | 53.4          | 50.0        | Lupus  | 13                 | 100.0            | 71.4          | 69.2        |
| Lupus  | 191                | 58.4             | 44.4          | 48.7        | Cervical gland   | 93                 | 65.0             | 62.3          | 51.6        |
| Scrofuloderma  | 60                 | 53.3             | 43.3          | 36.6        | Genito-urinary   | 42                 | —                | —             | 31.0        |
| Meningeal  | 265                | 28.1             | 24.5          | 24.6        | Bone and joint   | 218                | 46.2             | 28.9          | 29.8        |
| Bone and joint   | 553                | 29.5             | 19.1          | 19.5        | Meningeal  | 203                | 34.4             | 14.0          | 29.6        |
| Genito-urinary   | 23                 | —                | —             | 17.4        |  |                    |                  |               |             |

Of 241 specimens investigated in tuberculous children of Glasgow, 152 were of the human and 89 of the bovine type. Pulmonary tuberculosis was not included because up to 1922, the bovine bacillus in adult cases was thought to be a bacteriologic curiosity. Since then no less than 163 cases of the bovine type of phthisis have been reported in England. All ages considered, 50 per cent of cervical gland tuberculosis and lupus, 25 per cent of meningeal tuberculosis and about 15 per cent of bone, joint and genito-urinary forms are found to be due to the bovine bacillus. In Wales the bovine bacillus accounts for 1 per cent, in England, 1.6 per cent and in Scotland 7 per cent of pulmonary tuberculosis. Another investigator (Sir William Savage) attributes 5.5 per cent of deaths from tuberculosis including all forms at all ages to the bovine type.

### Human Tuberculosis

Pulmonary tuberculosis, once universally named *consumption* in the popular language (phthisic for the old doctors), is the most spectacular form of that disease but it is far from being the most common form. Nonpulmonary tuberculosis: Pleural, peritoneal, renal, intestinal, bone, articular, cutaneous, meningeal, uterine, testicular, lymphatic and others, are so many localizations of Koch's bacillus which in the aggregate greatly surpass in number the lung form.

### That Food-for-Freedom

The food shortage brought about by the

Civil War, in the absence of a systematic plan of controlling diseases among farm animals, was the starting point of veterinary colleges in the United States. The mastery of hog cholera, Texas fever, and pleuropneumonia had become imperative, but there were practically no men to draw upon to do the mastering. So, graduates of foreign veterinary schools (Andrew Smith, Duncan MacEachran, Alexander Liautard, and James Law) came over. In a few years, we had a federal veterinary service, and a state veterinarian in most of the important states. Result, as of 1942: the most important food-producing country ever known. The poundage of food that is being procured by the Army and Navy, not to mention the amount sent abroad, staggers the imagination, and yet few are aware that a veterinary service exists.



## Some Aspects of My Work with the United States Bureau of Animal Industry and the United States Army

MAJOR SAMUEL KELSALL, V.C., U.S.A.

I am very happy to attend this meeting. Little did I dream a few short months back that such an opportunity would ever be afforded me.

Shortly after my arrival in Ulster I made an unofficial call on Captain Munro, of your Ministry of Agriculture. At that time my duties were confined more or less to my particular organisation. Soon after, I was detailed to the higher headquarters to inaugurate veterinary inspection for our Army. From this time on my dealings with the Ministry of Agriculture became of an official nature. At this time I wish to take the opportunity on behalf of my Commanding General and myself to thank you, Captain Munro, your entire staff, and the civilian and municipal authorities for the splendid co-operation and assistance which they so willingly gave me. I am sure now since I have returned to my own organisation, and Major Arundel has taken over the work that I started, that he is enjoying the same cordial relations.

When I am attending a meeting and some speaker I do not know takes the floor the thought that immediately occupies my mind is, "who is this person, what has he done?" Since you may not be able to find answers for such questions, I will tell you something about myself. I am not one of our great veterinary surgeons—pathologist, bacteriologist, or practitioner. I am just one of the plain garden variety veterinarians of America. I am reminded of how one of our dental officers used to describe himself as a "Cross Roads" dentist. Yet "Cross Road Veterinarian" would hardly fit in my case as I have never given any time to the practice of veterinary medicine as such. Since

my graduation from Kansas State College in 1935, I have devoted my entire time to regulatory work: the first three years in the field of bovine tuberculosis eradication, of which I will speak later; the next three years in meat inspection, and the balance has been with the Army. As you can see, each of these endeavours is in the scope of preventive medicine, which not only has a bearing on the health of our livestock but also among our human population.

I shall speak first of the Veterinary Service with the Army. Prior to the World War, Veterinary Service with our Army was on a contract basis. The system was more or less unsatisfactory even for an army in peacetime, and could not function efficiently with an expeditionary force. Thus, the Veterinary Corps was formed as a part of the Medical Department. That was in the day of horse-drawn artillery and cavalry. The Veterinary Officer was principally concerned with the health and treatment of horses, and the inspection of forage. Food inspection was secondary. To-day the situation is reversed. In most cases the Veterinary Officer is primarily a food inspector. (In my country the term "food" applies to human, while "feed" applies to animals.) Veterinary inspection of food applies to all foods and food products of animal origin; it begins at, and in some instances prior to, purchase, and ends with issue to troops. From issue to consumption the supervision is under the jurisdiction of the Medical Officer concerned. Our food inspection is divided into two general classifications which may be designated as Sanitary and Specification.

Inspections for specification are made prior to purchase, at purchase, at origin, and at destination. They deal with type, class and grade. No inspection is made which does not include a sanitary inspection.

Address to the members of the North of Ireland Division, N.V.M.A., on the occasion of the annual general meeting of the Association at Belfast, July 2, 1942.

Reprinted without change from The Veterinary Record, Aug. 8, 1942.

Sanitary inspections include *ante-mortem*, *post-mortem*, and a general sanitary inspection of food products. They also include sanitary inspections of meat slaughtering, processing and packing establishments, poultry packing establishments, fish canneries, dairy farms, creameries, and milk and ice cream plants.

The Veterinary Service of the Army does not duplicate the work of our other Federal agencies. For instance, in the purchase of meat the inspection of the Bureau of Animal Industry for sanitary conditions of the establishment, *ante-mortem* and *post-mortem*, are accepted. The Army inspection would then begin with the inspection for compliance with specifications of the contract. This we feel is very important. Not only does it assure the ordinary soldier that the food which he eats is clean and wholesome, but also that for each dollar expended for food value is received. In times like these the lowering of the standards of grading a fraction of a point amounts to a colossal figure. So much for Army inspection.

The next subject is one that I enjoy dis-

cussing, and is one of which much can be said. It is Bovine Tuberculosis Eradication. As you know, the eradication of bovine tuberculosis was started in America some years ago. At that time a European government had abandoned the idea as not practical. For years the work went on progressing slowly. It was not until about 1928 that the effort was put on a wholesale basis. 1938 saw the whole of the United States as a modified tuberculosis-free area. Stanislaus County, California, was the last county to become modified. By "modified area" we mean that the incidence of reactors, on a complete test of a county, is less than one-half of 1 per cent.

This gigantic programme was financed by the States and Federal Governments. An indemnity was paid for each animal (except steers and grade bulls) reacting to the test. The years that I was working on this programme the maximum indemnity was \$25 for a grade and \$50 for a registered purebred animal.

Following are a few details of the test: The intradermal test was used, and was ap-

## Guardians of Health in the Armed Forces



Detachment of a medical regiment in training somewhere in the United States. Fred (Buddy) Andersen (inset), formerly in charge of circulation of the Journal of the American Veterinary Medical Association and American Journal of Veterinary Research, is a member of this unit.

plied to the caudal fold and the vulva. In most instances the caudal fold was used. The work was carried on by accredited veterinarians, employed for the most part by the Bureau of Animal Industry. Some were employed by the separate States. These veterinarians worked in crews which consisted of a supervisor and all the way from one or two to twenty-odd veterinarians. A supervisor would be assigned a county, and he would map the work out, giving each veterinarian a certain area to test. This area we called a territory. In States where the roads were built on section lines, the territory usually consisted of a geographical township. A geographical township is an area of 36 square miles—6 miles by 6 miles—36 sections. In most states the veterinarian worked with a lay helper. Work was arranged so that Monday, Tuesday and Wednesday were devoted to applying the test, while Thursday, Friday and Saturday were days for reading the test. The number of animals tested each week varied greatly with conditions. In an average week one would test 300 head. Some weeks many more were tested.

Many systems were used to identify animals to which the test was applied, but only one system was used to identify reactors. A reactor tag was placed in the left ear, and the letter "T" was branded on the left jaw. All reactors were slaughtered at establishments maintaining Federal or State meat inspection, and the results of the *post-mortem* examination were made a matter of record.

The greatest drawback to the whole programme was the lack of education preceding it, and this was only in certain sections. In some instances opposition reached an organized basis, and it was necessary to force the work by use of local law enforcement agencies. In at least one instance martial law was declared and the National Guard called in order to proceed with the programme. Had the proper education preceded the programme this would not have been necessary.

Why should tuberculosis be eradicated

from the bovine population? As far as I am concerned there are two vital reasons. First, from a public health standpoint. The incidence of bone and glandular tuberculosis among the human population decreased remarkably with the eradication of tuberculosis in the bovine. For this reason alone the programme was worth many times its cost. Second, a tuberculous herd is unprofitable to the owner in comparison with a tuberculosis-free herd.

Can bovine tuberculosis be eradicated from the North of Ireland? The answer is emphatically "yes." But such a thing will never come to pass without the wholehearted support of every veterinarian in this province. The education that must precede such a programme can only be given by the veterinary profession. To me it is the ethical duty of every veterinarian to foster such a programme. I cannot help but point with pride to the magnificent work done by the United States Department of Agriculture, Bureau of Animal Industry in the eradication of bovine tuberculosis.

### Wartime America\*

Our population has passed 131,000,000:

---

|                                 |            |
|---------------------------------|------------|
| a) Able to produce.....         | 65,000,000 |
| b) Aged 20 to 45.....           | 27,000,000 |
| c) Industrial workers .....     | 42,000,000 |
| d) Farm workers (summer)....    | 12,000,000 |
| e) Farm workers (winter).....   | 8,500,000  |
| f) Armed forces (1943).....     | 7,500,000  |
| 1942 .....                      | 6,000,000  |
| g) In war production.....       | 12,000,000 |
| h) In war production (1943)...  | 25,000,000 |
| Men .....                       | 19,000,000 |
| Women .....                     | 6,000,000  |
| i) Military age (married)**.... | 18,000,000 |

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\*Figures compiled from *Pathfinder*.

\*\*Or dependents.

Should the United States have to match Germany in men under arms, the personnel of the army and navy would number 19,000,000 instead of the proposed 7,500,000.\*



# Observations on Flatulent Colic in Puerto Rican Solipeds

JOHN S. ANDREWS, D.Sc., PABLO MORALES OTERO, M.D., and  
JOSE F. MALDONADO, B.S., M.S.

*San Juan, Puerto Rico*

DURING THE PAST ten years, periodic outbreaks of a condition known as epizootic flatulent colic occurred in the solipeds of Puerto Rico and adjacent islands. The disease appeared chiefly during the rainy season (October to January) among animals grazing recently flooded pasture land, or among those fed chopped grass freshly cut from low-lying swampy areas. In typical outbreaks, the affected animals became ill at approximately the same time, suffered severe colicky pains, became extremely bloated, ceased to eat, defecate, or urinate, and, in the majority of instances died within 24 to 48 hours.

Some stockmen and a few local veterinarians have considered the diseases to be infectious equine encephalomyelitis, in spite of repeated failures of competent workers to find evidence of the virus. As proof for their belief, these observers cite the apparent beneficial effects of the injection of encephalitis antiserum. Van Volkenberg<sup>1</sup> and Roberts<sup>2</sup> have suggested that the disease might be caused by gross infection with gastrointestinal parasites. It was primarily for the purpose of clarifying the relationship between the disease and infection with internal parasites that the present investigation was undertaken.

The data reported in this paper are divided into three sections: 1) that dealing with records of equine autopsies performed by the staff of the Department of Pathology of the School of Tropical Medicine, 2)

that having to do with the outbreak occurring on the island of Vieques, and 3) that obtained as a result of experimental work at the School of Tropical Medicine. The present paper brings together for the first time the available information concerning equine flatulent colic in Puerto Rico. Although the experimental results reported are not entirely conclusive, they appear to form a starting point for more critical work.

During the period between Nov. 14, 1928 and Jan. 17, 1940, 23 equine animals dying in Puerto Rico were examined, either whole or in part, by the Department of Pathology of the School of Tropical Medicine in order to ascertain the cause of death. Twelve, or 52 per cent, of these animals were found to have died of typical bloat colic. The data\* obtained from the autopsy records of this latter group are given in table I.

The data in table I show that the disease occurred in widely separated areas on the island of Puerto Rico, that the severe symptoms continued from one to five days, and that 75 per cent of the cases listed were encountered during the rainy season. The data further show: 1) the absence of gross infections with gastrointestinal parasites;\*\* 2) the absence of verminous aneurysms in all but two cases; 3) the absence of brain lesions except in one case; 4) the failure to demonstrate the presence of the virus of encephalomyelitis;† 5) the presence of a

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<sup>1</sup>Van Volkenberg, H. L.: Parasites and Parasitic Diseases in Puerto Rico, Bull. 37, P. R. Agricultural Experiment Station (Mayaguez), 1935.

<sup>2</sup>Roberts, G. A.: A Type of Equine Colic or Obstipation Common in Tropics, J.A.V.M.A., xciv (1939), pp. 202-207.

\*These data were made available through Dr. E. Kopplisch, Head of the Department of Pathology of the School of Tropical Medicine, San Juan, Puerto Rico.

\*\*All animals examined after Dec. 1, 1938, showed no internal parasites *post mortem*. Data pertaining specifically to the parasitic infections in these animals were published in the Annual Reports of the Puerto Rico Agricultural Experiment Station for 1939 and 1940. Since there was no correlation between either number or species of parasites recovered and the occurrence of attacks, these data were not repeated in the present paper.

†This work was done by the staff of the Department of Pathology, School of Tropical Medicine.



subnormal temperature in one case just prior to death; and 6) the isolation of an anaerobic organism from the feces of one animal. Since the enteritis, hemorrhage, infarction, and congestion noted almost universally in these animals could well be produced mechanically by the terrific gas pressure within the bloated intestine, the data indicate no definite pathological changes or other findings which could be associated with any specific disease process common to all of the cases studied.

*The outbreak on the island of Vieques.*—The outbreak of particular interest, so far as the present paper is concerned, occurred on the 10,000-acre farm of the Eastern Sugar Company located on the island of

Vieques which is about eight miles from the eastern shore of Puerto Rico. This island is very dry during most of the year, but for two weeks prior to this outbreak rain had caused a portion of the field from which grass was cut for the horses, mules, and donkeys, to become quite wet and swampy.

On Nov. 25, 1939, all of the animals had been stabled and fed grass from this wet area. The grass had been chopped into small pieces and was mixed with molasses water and placed in a continuous manger. On Nov. 27, 1939, 19 of the 32 animals fed grass from this area showed symptoms of colic. All but three of these died (*See table II*). On Nov. 29 and 30, 1939, the remain-

Table I.—Data from the Department of Pathology of the School of Tropical Medicine on Animals Known to Have Died of Epizootic Bloat

| CASE NUMBER | DATE     | LOCALITY                    | ANTEMORTEM DATA  | PATHOLOGICAL AND BACTERIOLOGICAL FINDINGS   |
|-------------|----------|-----------------------------|--|---|
| 2453        | 10/21/29 | North coastal plain         | Colic. Said to be due to forage poisoning.                   | Congestion of abdominal viscera. Enteritis. Anaerobic organism isolated from feces.   |
| 7964        | 12/ 8/33 | Central mountainous section | Colic. Typical of outbreaks of epizootic bloat colic.        | No evidence of encephalitis; hemorrhages in brain and other organs.   |
| 12993       | 8/27/36  | North coastal plain         | Bloat colic 48 hours duration. First of 6 horses to die.     | Acute enteritis. Infarction of intestine and mesentery. Volvulus of small intestine.  |
| 12995       | 8/28/36  | North coastal plain         | Colic. 4 days duration.                                      | Acute enteritis. Degeneration of liver strongyles present but not enough to cause pathology observed.                                 |
| E.P.96      | 1/25/38  | North mountainous section   | Colic. 3 days duration. Low temperature just prior to death. | No evidence of encephalitis.  |
| 1           | 1/21/39  | Central mountainous section | Typical colic. 2 days duration.                              | Acute enteritis, only finding.  |
| E.P.666     | 5/27/39  | South coastal plain         | Typical colic. 5 days duration.                              | No brain lesions present.   |
| E.P.865     | 10/26/39 | South coastal plain         | Colic. 3 days duration.                                      | Acute gastritis, enteritis. Congested omentum and mesentery. Nematode parasites and verminous aneurysm in superior mesenteric artery. |
| E.P.866     | 10/26/39 | South coastal plain         | Colic. 3 days duration.                                      | Abdominal distention, congestion. Brain negative.   |
| E.P.867     | 10/26/39 | South coastal plain         | Colic. 3 days duration.                                      | Hemorrhagic enteritis. Small aneurysm in ileo-caeco-colic artery.   |
| 6           | 11/21/39 | North coastal plain         | Colic. 2 days duration.                                      | Acute enteritis. No parasites.  |
| 7           | 1/17/40  | North coastal plain         | Colic. 24 hrs. duration.                                     | Acute enteritis. Few parasites.   |

der of the animals became ill. All but three of them recovered.

Data on the fatal cases of colic observed during the Vieques outbreak are shown in table II.

TABLE II.—Data on Animals Dying of Flatulent Colic on Vieques Island.

| ANIMAL NUMBER | APPROXIMATE AGE | FIRST SYMPTOMS SHOWN | DIED     | APPROXIMATE LENGTH OF ILLNESS |
|---------------|-----------------|----------------------|----------|-------------------------------|
|               | (years)         | (date)               | (date)   | (hours)                       |
| 1             | 2               | 11/27/39             | 11/28/39 | 36                            |
| 2             | 2½              | "                    | 11/29/39 | 48                            |
| 3             | 4               | "                    | 11/28/39 | 30                            |
| 4             | 4               | "                    | "        | 30                            |
| 5             | 5               | "                    | "        | 24                            |
| 6             | 6               | "                    | "        | 24                            |
| 7             | 6               | "                    | "        | 30                            |
| 8             | 8-9             | "                    | "        | 24                            |
| 9             | 8-9             | "                    | "        | 36                            |
| 10            | 10              | "                    | 11/29/39 | 48                            |
| 11            | 12              | "                    | 11/28/39 | 24                            |
| 12            | 12              | "                    | "        | 24                            |
| 13            | 12-14           | "                    | 11/29/39 | 48                            |
| 14            | 14              | "                    | 11/28/39 | 24                            |
| 15            | 15-16           | "                    | "        | 18                            |
| 16            | 16              | "                    | "        | 24                            |
| 17a           | ¾               | "                    |          |                               |
| 18b           | 10              | "                    |          |                               |
| 19c           | 14-15           | "                    |          |                               |
| 20            | 2½              | 11/29/39             | 11/29/39 | 10                            |
| 21            | 12              | "                    | 12/ 3/39 | 72                            |
| 22d           | 12-13           | 11/30/39             | 12/ 2/39 | 48                            |

a) Recovered 11/30/39.

b) Recovered 12/ 2/39.

c) Recovered 12/ 2/39.

d) Animals 23 to 32 recovered in from 3 to 5 days.

The data in table II show that the symptoms exhibited continued from 10 to 72 hours. These animals, therefore, appeared to have the same case histories as those listed in table I. Animals 2 and 10 were examined *post mortem*. The cecum and colon were found to be greatly distended with gas. The colon was packed with "rock-hard" feces, but the remainder of the intestinal contents were extremely watery. Very few intestinal parasites were found in either animal. There was considerable congestion and enteritis throughout the abdominal viscera, but no lesions were discovered which were typical of any localized condition or infection. The postmortem appearance of these animals was strikingly

similar to that found in horses previously examined which had died of bloat, and was negative in so far as giving a definite clue to the cause of death.

Specimens of feces from the sick animals and from the two examined *post mortem*, grass from pastures grazed by the affected animals, and grass and molasses water from the manger were taken to the School of Tropical Medicine for bacteriological examination.

*Experimental work at the School of Tropical Medicine.*—Nothing was found on the pasture grass or in the fecal material examined. However, a species of *Clostridium* was isolated by anaerobic culture from the grass and molasses-water mixture taken from the manger. This organism produced a toxin which gave rise to typical symptoms of botulism in laboratory animals. It appeared to be similar to *Clostridium botulinum* Type A, since it fermented maltose, dextrose, salicin, lactose, sucrose, and glycerol, producing acid and gas.

This organism was cultivated anaerobically in plain broth and the culture was given to horse 1 with fatal results, as shown in table III.

A complete autopsy was made on horse 1. An organism similar to the one administered to this animal was isolated from the intestine. All other organs were sterile to culture. A 24-hour culture of an organism isolated from the intestine of horse 1, and washed cells from a culture obtained from grass at the scene of a second outbreak of flatulent colic near Yabucoa, P. R., were fed to horse 2, but with negative results. A 48-hour blood culture of *C. botulinum* Type A, obtained from a standard culture of this organism, was then administered to horse 1 on Feb. 15, 1940. This animal developed typical symptoms of flatulent colic and died within 24 hours. Finally, the filtrate from a 9-day glucose broth culture of *C. botulinum* Type A, which had been passed through a Berkefeld filter, was administered to horse 3. This animal succumbed to this toxin 24 hours after first showing signs of intoxication.

So far as could be ascertained from the

study of the three experimental cases of colic resulting from the administration of botulinus toxin, no striking differences between them and previously described cases were seen; the symptoms exhibited, the duration of the disease, and the pathological picture being practically identical.

*The experimental data.*—1) The organism isolated from the grass and molasses-water mixture given the animals on the island of Vieques, which developed symptoms of typical flatulent colic, had the same cultural characteristics as *C. botulinum* Type A and produced a toxin causing typical symptoms of botulism in laboratory animals.

2) The feeding of cultures of this organism and its toxin to a normal horse produced the same disease as that observed in the Vieques animals, so far as could be de-

termined by clinical observation and autopsy findings.

3) The disease produced experimentally by this organism was identical with that produced by feeding organisms and toxin from a standard culture of *C. botulinum* Type A.

4) The pathological picture produced in the experimental animals by the toxin of *C. botulinum* Type A was also similar, if not identical with that seen in the cases previously described.

The conclusion seems warranted that *C. botulinum* Type A may have been responsible for the outbreak on the island of Vieques, since the grass fed the animals was contaminated with this organism.

#### DISCUSSION

Although the outbreak of bloating on

TABLE III.—Data on Cases of Experimental Flatulent Colic

| HORSE NUMBER | APPROXIMATE WEIGHT | DATE OF INFECTION | INFECTIVE AGENT   | QUANTITY ADMINISTERED | METHOD OF ADMINISTRATION | INCUBATION PERIOD | TYPE OF SYMPTOMS  | DURATION OF SYMPTOMS | DATE OF DEATH |
|--------------|--------------------|-------------------|---|-----------------------|--------------------------|-------------------|---|----------------------|---------------|
| (lb.)        |                    |                   |   | (cc.)                 |                          | (days)            |   | (hr.)                |               |
| 1            | 1,200              | 1 / 8/40          | Organism isolated from chopped grass and molasses water fed Vieques animals. 48 hr. plain broth culture.                  | 100                   | On hay                   | 4                 | Loss of appetite<br>flatulence<br>colicky pains<br>paralysis<br>convulsions | 48                   | 1/13/40       |
|              |                    | 1 / 9/40          | "   | 100                   | In water                 |                   |   |                      |               |
| 2            | 1,200              | 1/25/40           | 24 hr. broth culture or organism from intestine of Horse 1  | 25                    | In water                 |                   | No symptoms   |                      |               |
|              |                    | 2 / 6/40          | Washed organisms from <sup>a</sup> 48 hr. plain broth culture of anaërobe from grass near Yabucoa, P.R.                   | —                     | In water                 |                   | No symptoms   |                      |               |
|              |                    | 2/15/40           | 48 hr. blood culture <sup>b</sup> <i>C. botulinum</i> Type A from standard culture  | 25                    | In water                 | 4                 | Loss of appetite<br>flatulence<br>colicky pains<br>paralysis<br>convulsions | 24                   | 2/20/40       |
| 3            | 1,200              | 3 / 4/40          | Filtrate from Berkefeld <sup>b</sup> filter. 9-day glucose broth culture <i>C. botulinum</i> Type A from standard culture | 50                    | In water                 | 7                 | Loss of appetite<br>paralysis<br>flatulence<br>colicky pains<br>convulsions | 24                   | 3/12/40       |

<sup>a</sup>A relatively safe procedure since the animal was not on pasture and was isolated.

<sup>b</sup>Organisms from standard culture obtained from the Department of Agriculture, Washington, D. C.



the island of Vieques was probably due to the contamination of chopped grass with *C. botulinum* Type A and its toxin, it would be incorrect to conclude that all epizootics of flatulent colic in Puerto Rican solipeds are due to the toxin of this organism. There are four diseases, not to mention simple digestive disorders, which occur commonly in these species that are indistinguishable on the basis of symptoms alone. These diseases are infectious equine encephalomyelitis, moldy corn poisoning, botulism, and grass sickness or grass tetany.

According to Biester and Schwarte,<sup>3</sup> the first two diseases named are differentiated *antemortem* in Iowa chiefly by the time of year they occur. Haring<sup>4</sup> concluded that encephalitis and botulism could not be distinguished on the basis of symptoms. Walker<sup>5</sup> admitted that botulism and grass sickness presented many similar symptoms, although he described clinical differences between them. These references clearly indicate that no conclusions concerning the cause of colic in horses may be reached from a study of symptoms alone, and that much more work will have to be done on the problem in Puerto Rican animals before its cause can be ascertained.

Guthrie<sup>6</sup> has recently reported that mules and donkeys were not susceptible to grass tetany, the disease being peculiar to horses. If this observation is correct, grass tetany may be ruled out as a synonym of epizootic flatulent colic in Puerto Rico, because mules, donkeys, and horses are equally susceptible to this disease.

#### SUMMARY

A study of the autopsy records of 23 cases dying in Puerto Rico from November, 1928 to January, 1940 showed that 52 per cent had apparently died of bloat. Analysis

of the data disclosed that no single agent could be considered the cause.

An outbreak of typical cases occurring on the island of Vieques in November, 1939, which killed 19 of the 32 horses, mules, and donkeys affected, was investigated. The case histories obtained during this study were found to be indistinguishable from those accompanying the autopsy records previously reported.

An organism was isolated by anaerobic culture from the grass and molasses-water mixture fed to the Vieques animals just prior to the onset of symptoms. This organism was found to be similar to *Clostridium botulinum* Type A. Whole cultures of this organism, including the toxin, produced typical symptoms of flatulent colic when fed to an experimental horse. Whole cultures and toxin alone of *C. botulinum* Type A from a standard culture of this organism gave rise to identical symptoms in two other horses to which they were fed. The symptoms, course of the disease, and pathological changes occurring in the experimental animals were indistinguishable from those observed in the animals dying of this malady on the island of Vieques.

These findings appear to indicate that the Vieques outbreak may have been caused by the ingestion of the chopped grass contaminated with *C. botulinum* Type A and its toxin.

It was pointed out in the discussion that to assume that *C. botulinum* and its toxin were the cause of all outbreaks in Puerto Rican animals would be unwarranted, since infectious encephalomyelitis, moldy corn poisoning, botulism, and grass tetany present nearly the same symptoms and could easily be confused. Because of this situation, it is not possible to arrive at any conclusion as to the cause in Puerto Rico, until there is an opportunity for further careful investigation.

Where is the *hombre* who voted against military training of the CCC boys, who, as of 1942, would constitute quite a formidable army to pit against the Japs? Pacifist, where art thou?

<sup>3</sup>Biester, H. E., and Schwarte, L. H.: Laboratory Case Studies of Equine Encephalomyelitis, Iowa Veterinarian, vii (1936), pp. 13-17.

<sup>4</sup>Haring, C. M.: The Differential Diagnosis of Botulism and Western Type Infectious Encephalomyelitis in Horses, Veterinary Bulletin (Led.) viii (1939), pp. 65-70.

<sup>5</sup>Walker, A. B.: The Relation Between Grass Disease and Botulism, British Journal of Experimental Pathology, x (1939), pp. 252-260.

<sup>6</sup>Guthrie, W. J.: Grass Sickness in Horses, Journal of the Royal Agricultural Society (England), c (1940), pp. 50-54.

# Single Service Containers for Distribution of Fluid Milk

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SINGLE SERVICE paper containers for fluid milk have been known and used to some extent for 35 years or more. Prior to 1935, various attempts were made to introduce these containers for regular distribution of milk, first in New York City, later in Pennsylvania and other nearby states. High container costs and poor quality, resulting in leakers, were largely responsible for these early failures to establish paper containers for the regular distribution of milk and milk products. In 1933 and 1935, the first all-paper dairy installations were started in Philadelphia and in New York City. By 1937, it was generally agreed by both industry and milk sanitarians that this type of container has a definite place in milk distribution.

## DEVELOPMENTS OF PAPER MILK CONTAINERS

The use of the single service milk container has been greatest in metropolitan districts, particularly the New York City area. In these areas, the container competes with the glass bottle on substantially an equal economic basis. The use in the United States of paper containers for milk and cream, during 1937, was approximately 1,200,000 packages daily. Since then, the consumption of paper-packaged milk has probably trebled. In New York City alone, where, five years ago, 600,000 packages were used per day, over 1,000,000 paper containers of milk and cream are now utilized. In Canada, nearly 100,000 paper milk containers are used per day. While the early and most rapid developments occurred in Greater New York, Philadelphia, Baltimore and numerous cities and towns in New Jersey, the use of the paper milk container soon spread to the Middlewest

where many cities, towns and suburban areas adopted this method of milk distribution. These cities and towns include Indianapolis, the Chicago area, Louisville, Detroit, St. Paul, Minneapolis, Columbus, Cleveland, Dayton, St. Louis, and Toledo. Additional developments also have occurred in some of the larger cities in upstate New York, Boston, Washington, D. C., Pittsburgh, and Atlanta, extending as far south as Miami Beach, Florida. During the past 2 years the utilization of the paperboard milk container has made appreciable progress in South America.

A considerable increase in the use of these containers has occurred on the West Coast where Everett, Seattle, Merced, Lake Tahoe, San Francisco, Los Angeles, San Diego, Santa Barbara, and many other towns and cities regularly use milk and milk products that are packaged in paper containers. As a matter of fact, these containers are so generally available that practically every community in the United States utilizes them in packaging milk, cream, buttermilk, or other milk products for general distribution or for special purposes, including quarantined residences, hospitals, schools, factories, or for the convenience of vacationists.

The requirements of these various areas are adequately met by the five types of single service containers that are now in common use. Both prefabricated containers and those that are fabricated in milk plants are serving the needs of the more populous centers. In these cases, prefabricated containers are supplied as a dairy may have need by fabricating plants sometimes located nearby. Milk plants using the types of paper containers that are formed, waxed, and filled by machines installed in the dairy obtain supplies of milk-container board in the form of blanks that

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are delivered in compact packages. While bottling speed in the latter case is not as great as with the prefabricated types, this may not be a disadvantage where consideration is given to the adaptability of a container to the needs of individual dealers. The several varieties of single service containers referred to above require special machines for fabrication or filling. There is, in addition, considerable demand for a paper container that may be used with the ordinary filler employed for glass milk bottles. Many milk plants throughout the United States, small towns and larger cities alike, are so situated as to make this type of container convenient and economical. Two such containers are available.

While about 30 different varieties of paper milk containers have been developed for actual marketing or experimental purposes, only five are in every day use in the cities of the United States.

Canada is using two types, both of which were developed in Europe. These are the Perga and Satona containers. Prior to the present war, containers of these general types were used in several European countries for the packaging of milk, cream, and various fermented milks.

Containers in common use are of two general forms, the rectangular and the round. The former have either a flat or gabled roof-top. These are the American Can and Pure-Pak containers. There are three round types, two of which are nearly identical, having the form of a cone or megaphone and are known as the Sealright and Pure-cone (formerly Purity) containers. The other round container, the Reed, is cylindrical, having a folded star-shaped top, sealed with a metal fastener.

#### DEVELOPMENTS IN SANITATION

The manufacturers of these various types have successfully applied modern developments in engineering and sanitary construction and operation in a manner which insures the fabrication of suitable containers for the packaging of one of the

most perishable and easily contaminated foods.

Pulp and paperboard mills have actively cooperated with these fabricating plants by producing a clean, strong paperboard of virgin stock, which is free of all bacteria, except a few heat- and dryness-resistant, nonpathogenic types and possesses desirable physical characteristics such as those which aid folding, forming, and efficient moisture-proofing. These mills have put into effect extensive programs of microbiological and sanitary control, based upon the utilization of clean and sanitary raw materials; clean, bacteriologically satisfactory water supplies; control of microbiological growths through the use of steam, hot water and suitable chemical treatments; and proper handling of the finished paperboard. Converting plants have also adopted effective programs of sanitation, based upon procedures designed to keep clean and to protect the rolls of paper, sheeted stock and cut blanks from water, dirt and careless handling. The finished container as it is filled with milk is normally a clean and sanitary product. Recent bacteriological rinse tests of thousands of containers obtained from converters and milk plants show that 75 to 94 per cent of these containers yield 5 colonies or less per container. The most severe test for sterility known to bacteriologists is carried out by introducing sterile nutrient broth into containers and determining, after incubation, whether the broth remains sterile. Nearly all shipments of paper milk containers that are tested by this method show that approximately 80 per cent of them are free of microorganisms.

There is one other important contribution which should be made to the program of paper-container sanitation outlined above, namely, the cooperation of operators of milk plants and other food handling establishments. The effective microbiological control and sanitary precautions utilized by mills and converting plants may be nullified by the milk plant through faulty and



careless methods of handling these products.

It should be remembered that paper and paperboard products are received in a clean and essentially sterile condition. Milk plants should be mindful of this fact and handle paper stock and containers in a manner that is consistent with their high sanitary quality. Such products should not, therefore, be misused as door-stops, plugs, containers for other substances, nor as temporary devices for aiding mechanical operations. If operators are permitted to misuse some of these carefully prepared containers, it may lead to the careless handling of all of them. Storage should be clean, dry, and insect and rodent proof. It is desirable that shipping cases, wrappings and tubes containing these products remain sealed and unbroken until required for immediate use and that if the contents of a package should not be completely used up at the close of a day's filling operations, such packages should be resealed in a way that will adequately protect paper products from dust and all other forms of contamination.

It is of the utmost importance that effective precautions be taken to protect bottle caps and closures, paperboard blanks and containers from splashing water, dirt, soiling, and from unnecessary or careless manual contacts. Proper handling of paper products also requires that particular attention be paid to the cleanliness and neatness of the personnel, especially with regard to adequate use of hand-washing facilities, cleanliness of hands and nails and clean outer garments or uniforms.

#### REGULATIONS

Several years ago the problems of standards and regulations were uppermost in the minds of public health officials in areas where the paper containers were first introduced. There was a tendency at first toward detailed and restrictive regulatory measures. At a conference on the sanitation of milk containers held in Geneva, July 12, 1937, it was suggested, based on experimental findings, that a bacteriological standard of less than 500

colonies per Gm. of disintegrated paperboard used in the manufacture of these containers would undoubtedly prove fair and reasonable. Extensive research carried out since that time confirms the practicability of this requirement. Paper or paperboard developing not more than 500 colonies per Gm. in three of the last four analyses of these products, taken from different runs, is generally considered satisfactory. This is the percentage compliance method preferred by some authorities and does not involve averaging. Some health officials have accepted this standard while others, influenced by lower counts which some mills have been able to achieve with fair consistency have stiffened their requirements by decreasing the maximum count allowable to 250 colonies per Gm. This standard calculated as the logarithmic average of the bacterial plate counts of the last four analyses of these products taken during a grading period is more severe than the former one.

There is greater diversity in the standards that have been set for the finished container. At the 1937 conference referred to above, it was stated that the bacteriological standard for milk containers should logically be the same for paper as for glass. In conformity with the latest standard methods recommended by the American Public Health Association, it was suggested, therefore, that satisfactory compliance would be attained when quart containers develop not more than a thousand colonies, pint containers not more than 500 colonies and half-pint containers not more than 250 colonies as determined by the Standard Methods of the American Public Health Association. Departments of health have studied this matter in considerable detail. A regulation adopted only within the last few weeks by the United States Public Health Service states that all single service containers shall have a residual bacterial plate count of not more than 1.0 colony per cc. of capacity which is in agreement with the standard previously mentioned. The city of Baltimore, which was one of the first cities to adopt paper container regulations, specifies a standard

of not more than 50 colonies per quart container. Boston has recently ruled that quart containers shall not contain more than 25 colonies by the rinse test, with a proportional standard for containers of different sizes.

The modern types of paper milk containers are really in an excellent sanitary and bacteriological condition. Public health officials who have studied available data and investigated the problems involved, believe that they can adequately meet the situation with regulations that are simply objective in character. It is generally considered sufficient to require that the paper container be fabricated from clean and sanitary materials, and that these materials and the conditions of manufacture and fabrication with respect to sanitary provisions be known to and approved by the health department involved. The requirements usually also include a bacteriological count standard for the paperboard used and for the finished container. It is usually considered desirable to require that the finished container be effectively moisture-proofed to the satisfaction of the health officials.

Certain other items apply to dealers that are licensed to sell milk and cream. In order to comply with the requirements, conditions, and regulations of public health departments, dealers should have knowledge and appreciation of the essential cleanliness and sanitary quality of paper products which they receive and of the proper methods of handling and using them.

While the paper milk container is new to many communities in the United States, this method of packaging milk and milk products has considerable background in engineering and sanitation research and the advantage of a slow, steady development. The types of containers that are now in general use show the benefits of this background. It is now generally believed that the paper container has a definite place in milk distribution in the United States. This container represents a progressive step in the development of suitable, clean, and sanitary packages for perishable foods.

## Postwar Milk Consumption

The inclusion of fresh milk in the army ration is creating the milk-drinking habit among so many soldiers that the milk-producing industry must prepare to maintain the habit when the war is over; otherwise, there will be a slump in milk consumption. The legions now serving in the army are learning from experience that milk is not just a baby food but a beverage that makes he-men fighters. The objective of the milk industry is to build good will and future sales for milk when the soldiers reënter civilian life. A strange turn of affairs is that soldiers who never drank milk at home, now spend their own money in the canteens for that beverage.—*From Certified Milk.*

## Colombia Veterinarians Organize

From Prof. C. A. Rojas Maldonado, of the veterinary faculty of *Las Universidades de Bogata y Philadelphia*, comes the interesting announcement that the Colombian Veterinary Medical Association was formed, with the following as its first group of officers: Drs. Helidoro Bonilla, *president*; Francisco Virvieseas, *vice-president*; Carlos Alberto Maldonado, Rafael V. Reyess and Manuel J. Torres, *officers*. Newspaper clippings announcing the event were enclosed, and copies of the constitution and by-laws and reports of the Association's work are promised.

The writer expresses his delight at the prospect of holding a Pan-American Veterinary Congress\* in the United States in the near future, and sends the greetings of this new national society to the AVMA, which we hereby acknowledge with our best wishes and our pledge to coöperate.

The "Alcan" highway is the name given to the road that is under construction from Dawson Creek, B. C., to Fairbanks, Alaska. Completed: Nov. 1, months ahead of schedule.

\*The organization of the Pan-American Veterinary Congress, proposed by A. E. Wight in his presidential capacity in 1940, was temporarily interrupted by the war.

# The Use of Grain Containing Tarweed (*Amsinckia Intermedia*) Seed as Poultry Feed

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UNSCREENED WHEAT from many western regions of the United States frequently contains seed of the tarweed (*Amsinckia intermedia*). The heavy screenings from such wheat consist largely of broken wheat grains and tarweed seed. The questions of feeding such unscreened wheat to poultry and the possible utilization of heavy screenings as poultry feed are of economic importance. The seed of *A. intermedia* previously<sup>1</sup> has been shown to be toxic for swine and horses, less toxic for calves and without demonstrable toxicity for sheep.<sup>1, 2</sup> In a preliminary trial<sup>1</sup> six chickens kept in dark quarters and fed screenings containing *A. intermedia* seed were in good condition when the feeding was discontinued after approximately six months. These birds apparently were protected from vitamin D deficiency by the seed, from which the six control birds died.

Experiments, therefore, were undertaken to ascertain whether the feeding of high levels of *A. intermedia* seed would have a deleterious effect on chickens.

## EXPERIMENTAL

One hundred and sixty, 25-day-old male single comb, White Leghorn chicks were divided into eight equivalent groups, Oct. 3, 1941. Six groups were fed different levels of ground tarweed-seed wheat mixtures and two groups were fed corresponding levels of cleaned wheat, mixed with the following basic ration as suggested by the poultry division of this experiment station.

Screenings from three sources were used and although all were run through a seed cleaner to concentrate the tarweed seed,

| Material                            | Percentages | Pounds   |
|-------------------------------------|-------------|----------|
| Ground yellow corn .....            | 23.0.....   | 345.0    |
| Ground oats .....                   | 25.0.....   | 375.0    |
| Millrun .....                       | 30.0.....   | 450.0    |
| Dehydrated alfalfa .....            | 7.5.....    | 112.5    |
| Meat scrap .....                    | 2.5.....    | 37.5     |
| Fish meal .....                     | 8.2.....    | 123.0    |
| Ground oyster shell.....            | 2.0.....    | 30.0     |
| Salt .....                          | 1.0.....    | 15.0     |
| Bonemeal .....                      | 0.8.....    | 12.0     |
|                                     | 100         | 1500.00  |
| Fish oil (400 units D per Gm.)..... |             | 2.25     |
| Manganese sulfate .....             |             | 7 ounces |

At first 6 per cent and later 2 per cent dried whey also was added to this ration as a source of riboflavin.

they varied in *A. intermedia* seed content from 31.5 per cent to 68.9 per cent. The basic diet was supplemented by the ground screenings in the case of the experimental birds and by cleaned wheat for the control birds as shown in table 1.

The birds in group 8, which received the ration containing the largest percentage of screenings, ate between 5 and 10 per cent more than did the other groups, while the birds in group 7, which received the ration containing next to the largest percentage of screenings, also consumed slightly more than did the controls. However, due to some waste of feed from the feeding troughs, the exact consumption was impossible to ascertain. The fibrous nature of some of the debris in the screenings would account for its having lower food value than wheat.

On Nov. 15, after the chickens had been on the experimental rations for six weeks, it became necessary to reduce the number of birds in each lot to prevent overcrowding. From each group of 20, the 10 nearest

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<sup>1</sup>McCulloch, Ernest C.: Hepatic Cirrhosis of Horses, Swine and Cattle due to the Ingestion of Seeds of the Tarweed, *Amsinckia intermedia*. J.A.V.M.A. xcvi (1940), pp. 5-18.

<sup>2</sup>Muth, O. H.: An Attempt to Determine the Toxicity of *Amsinckia intermedia* (Tarweed) for Fat-tening Lambs *Ibid.* xcix (1941), pp. 145-146.



in weight to the mean weight of the group were retained on the feeding trial. The weight records of these birds are given in table 2. The birds removed were placed in individual pens in laying batteries and fed the same ration as was received by control group 5, that is, with 30 per cent wheat added to the basic ration. Their weight records are given in table 3.

At the end of the feeding trial, Jan. 11,

the birds in groups 2, 3 and 4 were placed on the same ration as control group 1 and the birds in groups 6, 7 and 8 on the same ration as control group 5.

The chickens receiving the three moderate levels of tarweed screenings gained from an average of 167 Gm. to an average of 1453 Gm., while the control birds which received 10 per cent wheat instead of the screenings gained from an average of 166

TABLE 1—Basic Ration, Wheat, Concentrated Screenings and *A. intermedia* Fed.

| GROUP         | OCT. 4               |            |                      |           | OCT. 15              |            |                      |           | OCT. 16              |            |                      |           | OCT. 31              |            |                      |           | NOV. 1               |            |                      |           | JAN. 11              |            |                      |           |
|---------------|----------------------|------------|----------------------|-----------|----------------------|------------|----------------------|-----------|----------------------|------------|----------------------|-----------|----------------------|------------|----------------------|-----------|----------------------|------------|----------------------|-----------|----------------------|------------|----------------------|-----------|
|               | BASIC<br>RATION<br>% | WHEAT<br>% | SCREEN-<br>INGS<br>% | A. i<br>% | BASIC<br>RATION<br>% | WHEAT<br>% | SCREEN-<br>INGS<br>% | A. i<br>% | BASIC<br>RATION<br>% | WHEAT<br>% | SCREEN-<br>INGS<br>% | A. i<br>% | BASIC<br>RATION<br>% | WHEAT<br>% | SCREEN-<br>INGS<br>% | A. i<br>% | BASIC<br>RATION<br>% | WHEAT<br>% | SCREEN-<br>INGS<br>% | A. i<br>% | BASIC<br>RATION<br>% | WHEAT<br>% | SCREEN-<br>INGS<br>% | A. i<br>% |
| 1 (Control)   | 90                   | 10         | 0                    | 0         | 90                   | 0          | 0                    | 0         | 90.0                 | 10         | 0                    | 0         | 90.0                 | 10         | 0                    | 0         | 90.0                 | 10         | 0                    | 0         | 90.0                 | 10         | 0                    | 0         |
| 2             | 95                   | 0          | 5                    | 2.36      | 96.5                 | 0          | 3.52                 | 2.4       | 92.5                 | 0          | 7.5                  | 2.35      | 92.5                 | 0          | 7.5                  | 2.35      | 92.5                 | 0          | 7.5                  | 2.35      | 92.5                 | 0          | 7.5                  | 2.35      |
| 3             | 90                   | 0          | 10                   | 4.73      | 92.8                 | 0          | 7.20                 | 5.0       | 85.0                 | 0          | 15.0                 | 4.70      | 85.0                 | 0          | 15.0                 | 4.70      | 85.0                 | 0          | 15.0                 | 4.70      | 85.0                 | 0          | 15.0                 | 4.70      |
| 4             | 85                   | 0          | 15                   | 7.1       | 80.0                 | 0          | 11.00                | 7.6       | 77.5                 | 0          | 22.5                 | 7.10      | 77.5                 | 0          | 22.5                 | 7.10      | 77.5                 | 0          | 22.5                 | 7.10      | 77.5                 | 0          | 22.5                 | 7.10      |
| 5 (Control)   | 70                   | 30         | 0                    | 0         | 70.0                 | 30         | 0                    | 0         | 70.0                 | 30         | 0                    | 0         | 70.0                 | 30         | 0                    | 0         | 70.0                 | 30         | 0                    | 0         | 70.0                 | 30         | 0                    | 0         |
| 6             | 80                   | 0          | 20                   | 9.5       | 84.7                 | 0          | 15.3                 | 10.5      | 70.0                 | 0          | 30.0                 | 9.50      | 70.0                 | 0          | 30.0                 | 9.50      | 70.0                 | 0          | 30.0                 | 9.50      | 70.0                 | 0          | 30.0                 | 9.50      |
| 7             | 75                   | 0          | 25                   | 11.8      | 82.2                 | 0          | 17.8                 | 12.2      | 62.5                 | 0          | 37.5                 | 11.80     | 62.5                 | 0          | 37.5                 | 11.80     | 62.5                 | 0          | 37.5                 | 11.80     | 62.5                 | 0          | 37.5                 | 11.80     |
| 8             | 70                   | 0          | 30                   | 14.3      | 78.7                 | 0          | 21.3                 | 14.6      | 55.0                 | 0          | 45.0                 | 14.20     | 55.0                 | 0          | 45.0                 | 14.20     | 55.0                 | 0          | 45.0                 | 14.20     | 55.0                 | 0          | 45.0                 | 14.20     |
| Per cent A.i. | 47.3                 |            |                      |           | 68.9                 |            |                      |           | 31.5                 |            |                      |           |                      |            |                      |           |                      |            |                      |           |                      |            |                      |           |

A. i = *A. intermedia* seed.

TABLE 2—The Average Weights, in Grams, of Chickens Fed *Amsinckia intermedia* Seed from 25th to 125th Day.

| GROUP       | OCT. 3 | OCT. 10 | OCT. 17 | OCT. 24 | OCT. 31 | NOV. 8 | NOV. 15 | NOV. 22 | NOV. 29 | DEC. 6 | DEC. 13 | DEC. 21 | DEC. 27* | JAN. 3 | JAN. 11† | JAN. 17 | JAN. 24 |
|-------------|--------|---------|---------|---------|---------|--------|---------|---------|---------|--------|---------|---------|----------|--------|----------|---------|---------|
| 1 (Control) | 168    | 231     | 319     | 400     | 501     | 624    | 711     | 811     | 880     | 953    | 1011    | 1175    | 1211     | 1244   | 1447     | 1485    | 1551    |
| 2           | 172    | 238     | 319     | 404     | 515     | 627    | 698     | 820     | 936     | 988    | 1041    | 1135    | 1152     | 1213   | 1395     | 1492    | 1578    |
| 3           | 172    | 247     | 341     | 416     | 526     | 653    | 738     | 887     | 988     | 1058   | 1108    | 1220    | 1232     | 1332   | 1521     | 1615    | 1676    |
| 4           | 171    | 243     | 332     | 407     | 546     | 701    | 778     | 892     | 999     | 1026   | 1101    | 1148    | 1142     | 1261   | 1443     | 1532    | 1623    |
| 5 (Control) | 164    | 235     | 314     | 495     | 521     | 657    | 718     | 830     | 951     | 1074   | 1164    | 1262    | 1204     | 1266   | 1389     | 1478    | 1550    |
| 6           | 171    | 240     | 322     | 399     | 526     | 679    | 730     | 845     | 895     | 972    | 1122    | 1119    | 1095     | 1144   | 1371     | 1414    | 1486    |
| 7           | 170    | 242     | 335     | 397     | 501     | 639    | 737     | 869     | 979     | 1088   | 1176    | 1287    | 1223     | 1273   | 1397     | 1517    | 1561    |
| 8           | 161    | 233     | 313     | 367     | 445     | 536    | 680     | 810     | 910     | 962    | 1069    | 1225    | 1204     | 1284   | 1485     | 1573    | 1595    |

Each group contained 10 birds.

\*The preceding week was very cold and the drinking water was frozen much of the time.

†*A. intermedia* seed was fed until Jan. 11.

TABLE 3—The Average Weights, in Grams, of Chickens Fed *Amsinckia intermedia* Seed from 25th to 69th Day and Then Fed Control Ration to the 125th Day.

| GROUP       | OCT. 3 | OCT. 10 | OCT. 17 | OCT. 24 | OCT. 31 | NOV. 8 | NOV.* 15 | DEC. 6 | JAN. 3 |
|-------------|--------|---------|---------|---------|---------|--------|----------|--------|--------|
| 1 (Control) | 163    | 227     | 308     | 411     | 424     | 622    | 701      | 1013   | 1392   |
| 2           | 161    | 229     | 301     | 384     | 504     | 584    | 699      | 1004   | 1370   |
| 3           | 162    | 243     | 310     | 402     | 522     | 648    | 737      | 1104   | 1586   |
| 4           | 165    | 233     | 324     | 389     | 538     | 672    | 785      | 1101   | 1422   |
| 5 (Control) | 173    | 249     | 326     | 413     | 536     | 663    | 711      | 1056   | 1516   |
| 6           | 167    | 246     | 333     | 415     | 534     | 680    | 732      | 1066   | 1412   |
| 7           | 169    | 238     | 330     | 392     | 534     | 638    | 742      | 1111   | 1526   |
| 8           | 175    | 259     | 341     | 378     | 449     | 539    | 659      | 1040   | 1476   |

Each group contained 10 birds. *A. intermedia* seed was fed until November 15. These birds were then removed from the experimental pens and fed 70% basic ration and 30% wheat.

Gm. to an average of 1447 Gm. The birds receiving the three highest levels of tarweed screenings during the same period gained from an average of 170 Gm. to an average of 1418 Gm., while the control birds which received 30 per cent wheat gained from an average of 169 Gm. to 1389 Gm. After *A. intermedia* seed feeding had been discontinued and all groups were on the same ration as the controls, the experimental birds continued to make as good gains as the controls.

The gains made by the birds receiving low levels and those receiving high levels of *A. intermedia* seed and their corresponding controls are shown in graph 1 and the weight records of each group are shown in tables 2 and 3. The weight losses during the week of Dec. 21 were due to very cold weather when the drinking water was frozen much of the time.

No birds were lost from groups 1, 3 and 8. Three birds were killed accidentally: One from group 4 and one from group 6 had legs broken and one from group 5 was hanged by a loose wire. One bird in group 2 died on Dec. 4. This bird was droopy for several days and upon autopsy, the liver was found to be enlarged and to contain numerous small necrotic areas. Cultures were negative except for *Escherichia coli*. One bird from group 7 was found dead on Jan. 22. The autopsy findings were essentially negative.

#### CONCLUSIONS

*Amsinckia intermedia* seed, in the amounts occurring in unscreened western wheat, is not toxic for poultry. Even 14 per cent of *A. intermedia* seed in the ration is not toxic when fed for as long as 100 days during the period of most rapid growth. Feeding experiments extending over much longer periods and to laying hens and breeders must be conducted before the possibility of toxic effects from the feeding of this seed to poultry is eliminated.

The cry of Oliver Twist was never louder than now.

#### Drugs in the Americas

Having been in the drug-plant business before Columbus sailed west, the Americas are not likely to suffer long for want of important drugs. The Indians catalogued medicinal plants as carefully as the modern scientist. Coca, caffeine, jalap, sarsaparilla, cubeb, quassia, copaiba, senna, papaya, soap bark, aloes, rhatany, pilocarpus, balsam of Peru, ipecac, castor bean, ergot, chenopodium, cascara sagrada, peppermint, and fennel, to mention but a few, are of the Western Hemisphere. Cinchona, although an American native long neglected in the homeland, is now being planted with skillful care in Central and South America and will soon replace the East Indian product. Agar-agar is being gathered in southern California, and drug houses are raising aconite, digitalis, belladonna, and henbane.

In short, when the war is over, the Western Hemisphere will find itself more self-supporting in the matter of essential drugs than was ever expected in recent years.—  
*From the USDA.*

In their effort to produce more food as a wartime measure, the American farmers should not forget that quackery in the practice of veterinary medicine is not a good companion. In all history it has been able to plunder and destroy because new hocus-pocus was never lacking and dupes were never rare.

#### Lickin' Adolph Hitler

The *American Druggist's* declared plan for defeating the Axis is to doll up the drug store windows with livestock remedies and start selling poultry remedies to the farmer's wife. It's all that simple, and here, some were beginning to believe that tanks, airplanes, long range guns and several soldiers and sailors would be needed.

You can't afford to buy a War Bond every day, but the money spent for a War Stamp or two will never be missed. The alternative is German or Japanese occupation of a seat at your fireside.

# Parenchymatous Goiter in Newborn Goat Kids

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THE FACT THAT the thyroid gland is by no means a static organ has been stressed by various workers. In a paper by Gilmore, Venzke, and Foust,<sup>1</sup> they reported that this seems to be true in the dog, at least when the histology and weight are studied. Maximow<sup>2</sup> also states that the epithelium of the thyroid gland shows great variation in size and arrangement depending upon age, sex, season of the year, and the diet. Rice<sup>3</sup> in a paper on the histologic structure of the normal human thyroid has also brought out this point. Marine<sup>4</sup> has stated that histologically the thyroid glands of all mammals are essentially the same. This would suggest that variation in size and structure of the thyroid may be expected in all mammalian species.

While there is agreement on the variation in the thyroid, there seems to be disagreement upon the point at which the hyperplastic state begins and on the point at which hyperplasia is pathological. Marine<sup>4</sup> states that any gland with cells higher than low cuboidal is hyperplastic. He further adds that thyroid hyperplasias are similar to primary toxic goiter in man, and are characterized by greatly reduced stainable colloid, papillomatous ingrowths and invaginations of the epithelial lining of the acini. The cells themselves are of a high columnar

type with a granular cytoplasm. The nuclei are round, pale, vesicular and located basally, together with a diffusively increased stroma. Abbott and Prendergast<sup>5</sup> in a study of animal thyroids divide what they consider to be normal glands into two types: resting and active. In the former, the criteria for the diagnosis are low, cuboidal epithelium, well-marked colloid, with the stroma and vascularity of no great importance. The active glands, according to these authors, show cells of a cubical type with a colloid content similar to or slightly less than in the normal, resting gland. The greatest difference in these two types is in the intra-acinous stroma. In the active glands, there are well-marked, numerous, moderately distended vessels. The glands, according to these writers, also appear in transitory stages; either progressing from a normal, resting to a hyperplastic stage, or reverting to a colloid from the hyperplastic stage. Whether progressive or regressive, these glands were conceded to be in a normal, physiologic phase, and not pathological. It is further stated by these writers that the hyperplastic state is based on the cell type, amount of tufting and paucity of colloid. No gland was considered by them to be hyperplastic until the cell type was at least low columnar. They also state that hyperplastic, active glands are the rule in young animals.

In the series of cases reported in this paper, all occurred in newborn, (full time) goat kids, born of dams in an experiment naturally exposing them to *Brucella melitensis* infection. All animals were born dead except No. 2, which was a twin to No. 1 and lived only a short time after birth. The

From the Animal Disease Station, Bureau of Animal Industry, U. S. Department of Agriculture.

<sup>1</sup>Gilmore, James W., Venzke, Walter G., and Foust, Harry L.: Growth Changes in Body Organs. Part II. Growth Changes in the Thyroid of the Normal Dog. Amer. Jour. Vet. Res., 1 (Oct., 1940), pp. 66-72.

<sup>2</sup>Maximow, and Bloom.: 1938. Textbook of Histology (Saunders).

<sup>3</sup>Rice, C. O.: Histological Structure of the Normal Thyroid Gland. Arch. of Surg., xlix (1938), pp. 96-101.

<sup>4</sup>Marine, D.: On the Occurrence and Physiological Nature of Glandular Hyperplasia of the Thyroid (Dog and Sheep) together with remarks on Important Clinical Problems. Johns Hopkins Hospital Bull. 18 (1907), pp. 359-364.

<sup>5</sup>Abbot, A. C., and Prendergast, J.: 1934, Histologic Variations in Animal Thyroids in Western Canada. Canadian Med. Assoc. Jour. xxxi, 5:465 (November).



dam of kids 1 and 2 was negative to *Br. melitensis* on culture and blood titer at the time of parturition.

**Kid 1.**—The animal was born hairless and showed a greatly enlarged, round mass in the superior tracheal region. Upon blunt dissection, the enlargement proved to be the thyroid gland. The weights and measurements were: right lobe, 26.2 Gm.; 52 mm. axially, 35 mm. transversely, 25 mm. vertically; left lobe, 18.0 Gm.; total weight—44.2 Gm.

**Kid 2.**—This animal was fully haired out, and while there was an enlargement in the upper tracheal region which proved to be the thyroid on blunt dissection, it was not nearly as large as the gland of its twin. No measurements of this gland were made but the right and left lobes weighed 7 Gm. and 8 Gm. respectively.

**Kid 3.**—This animal was born 52 days after the first two, and in the same group. The blood titer of the dam was 1 : 50 and a culture of the left half of the udder was positive for *Br. melitensis*. The kid appeared normal except for a large swelling in the region of the larynx, which proved to be the thyroid gland. One lobe was slightly larger than the other and the gland was dark red. The weight and measurements were: right lobe, 16.3 Gm.; 50.0 mm. axially, 38.0 mm. transversely, 13.0 mm. vertically; left lobe, 13.5 Gm.; 50.0 mm. axially, 25.0 mm. transversely, 13.5 mm. vertically; total weight—29.8 Gm.

**Kid 4.**—This kid was born dead 96 days after kid 3. At parturition, the dam showed a blood titer of 1 : 25 against *Br. melitensis*, which was negative for the same organism on culture study. The animal was not quite fully haired out, though it was a full-time kid. The only other gross change was an enormous swelling in the region of the larynx, which proved to be the thyroid gland on blunt dissection. The organ was dark red. The weights and measurements were: right lobe, 32.9 Gm.; 55.0 mm. axially, 35.0 mm. transversely, 25.0 mm. vertically; left lobe, 22.2 Gm.; 53.0 mm. axially, 30.0

mm. transversely, 19.0 mm. vertically; total weight—55.1 Gm.

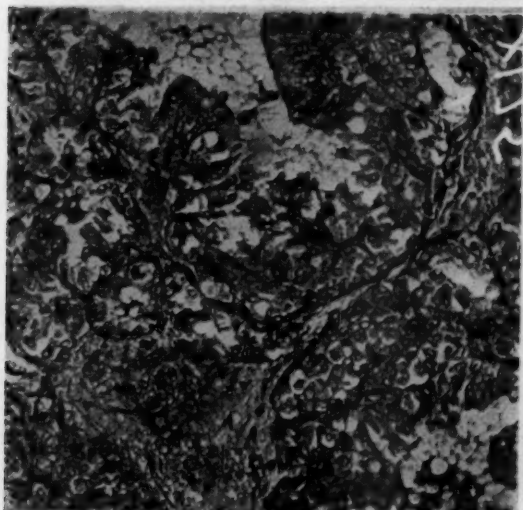
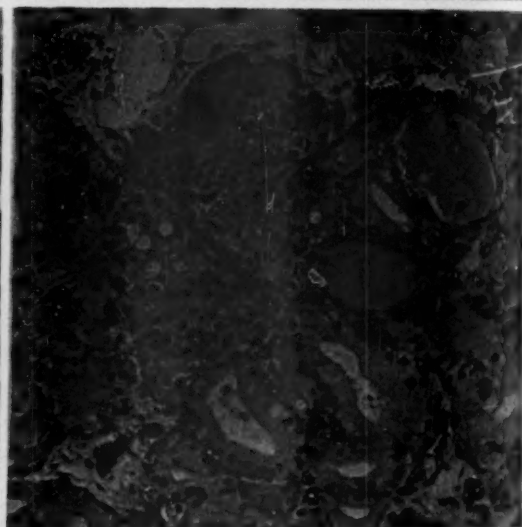
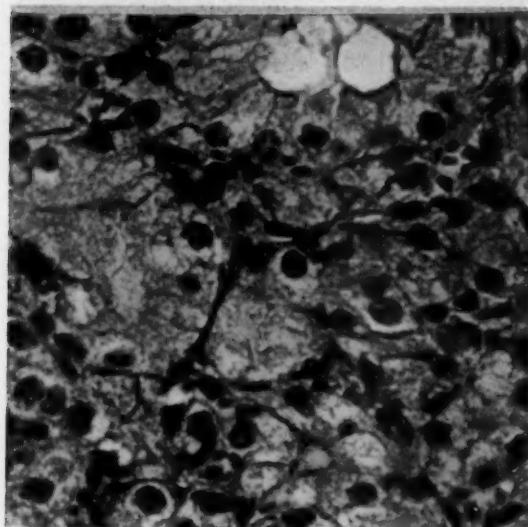
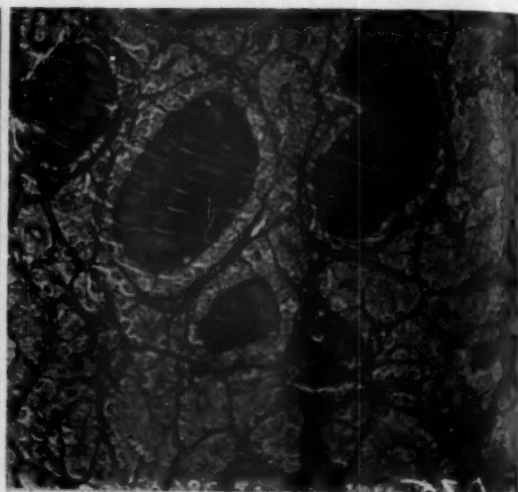
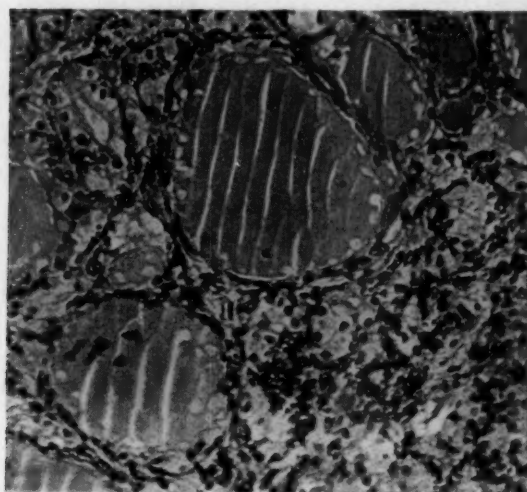
#### HISTOLOGY

**Kid 1.**—The predominant histological picture in this gland was one of large numbers of small, incompletely developed acini, lined by tall, columnar, epithelial cells. Some of these follicles (acini) contained small lumens, while in others none was perceptible. Most of them were devoid of colloid. Interposed among these poorly developed, noncolloid containing acini were much larger and more completely developed follicles, which varied greatly in size. The epithelium lining of these follicles varied from cuboidal to columnar in type. Most of them contained colloid of a mixed reaction. Hyperemia was evidenced by filling of the vessels and capillaries throughout the section.

**Kid 2.**—The only significant histological difference between the gland in this kid and case 1 was that in this case greater numbers of incompletely developed acini were present in comparison with the numbers of more completely developed and larger follicles.

**Kid 3.**—On histological examination of the thyroid from this kid, large numbers of small, poorly developed acini, lined by tall columnar epithelium were seen interspersed among larger and more completely developed follicles. Small lumens were present in some of the smaller acini, but in many cases none was evident. Only a few of these acini contained colloid. Alkaline colloid, highly vacuolated, was observed in most of the larger follicles. These were lined by epithelium which varied from cuboidal to columnar in type. Small, intracytoplasmic colloid droplets were present in epithelial cells throughout the section, particularly in the colloid-containing follicles.

**Kid 4.**—Histologically, the thyroid gland from this case varied from the other three in that only a few, small, poorly developed follicles were present. Most of the follicles showed fairly complete development, but were hyperplastic. The epithelial elements



were of a tall columnar type and were piled several layers deep in many instances. In some areas, the hyperplastic appearance was sufficiently pronounced to suggest adenomatous change. In many instances, the cells appeared to be anuclear. When observed, the nuclei were large, pale, ovoid, and vesicular. Some of the follicles contained alkaline colloid, though many of them were devoid of this substance. Small, intracytoplasmic colloid droplets could be seen throughout the section in the epithelial cells. Marked filling of the lymphatics and hyperemia was a rather prominent feature of the section.

#### DISCUSSION

The predominance of the epithelial elements over the colloid was the characteristic feature of the foregoing cases. In kids 1, 2, and 3, this change was due to the presence of large numbers of small, incompletely developed acini. These were interspersed among a lesser number of more completely developed follicles, some of which were hyperplastic. While there were only a few of the small, incompletely developed acini observed in kid 4, the remaining acini were markedly hyperplastic and contained but little colloid.

The gross enlargement of the glands, together with the histological picture of epithelial predominance over the colloid elements, indicated a diagnosis of parenchymatous goiter.

It is unfortunate that clinical studies could not be carried out, as a paper published recently<sup>6</sup> describes a syndrome in which the histological picture of the thyroid

in two cases seems to be similar to the ones reported here. The fact that the four cases reported here occurred in one group of goats seems to preclude the possibility of aberrant development. The appearance of two kids in the group not well haired out suggests an iodine deficiency. Since all of the animals were from one group, kept under identical conditions, it is possible to regard this the underlying factor, even though all of them did not exhibit the condition in the hair coat. Stimulation of the fetal thyroid to overcome the suggested deficiency could well be considered as the basis for the thyroid enlargement. Even though all of the kids were the offspring of dams exposed to *Br. melitensis* infection, there seems to be little reason to consider this from an etiologic standpoint.

#### SUMMARY

- 1) A brief discussion of normal and hyperplastic thyroid glands is considered.
- 2) Four cases of thyroid enlargement in newborn kids are presented.
- 3) All kids were born of dams on a *Brucella melitensis* exposure experiment.
- 4) Three of the kids were born dead and the fourth died shortly after birth.
- 5) Gross and histopathological studies received consideration and upon these bases a diagnosis of parenchymatous goiter was made.
- 6) Probable etiology of the condition is suggested.

In the stack of War Bonds and Stamps you  
buy lies the punch of the soldiers and sailors  
who fire the guns.

Remember December 7, 1941.

#### Captions for cuts on page 486.

Fig. 1.—Kid 1, showing incompletely developed acini interspersed among the colloid-containing follicles, x 175, H and E.\*

Fig. 2.—Kid 2, showing the large number of incompletely developed acini, x 175, Heidenhain's modification of the Mallory axan stain.

Fig. 3.—Kid 2, showing the character of epithelial cells in the incompletely developed follicles, x 550, H and E.

Fig. 4.—Kid 3, showing the large number of incompletely developed acini interspersed among a few layers of incompletely developed follicles, x 175, H and E.

Fig. 5.—Kid 4, showing the hyperplastic follicles, vacuolated colloid and edema, x 175, H and E.

Fig. 6.—Kid 4, showing the intracytoplasmic inclusions, x 1,600, H and E.

\*H and E = Hematoxylin and Eosin.

<sup>6</sup>Williams, J. G., Steyn, Douw G. and Groenewald, J. 1938. An investigation into the Nature and Cause of a Disease in New-born Merino Lambs affecting the Thyroids and Nervous Systems. S.A.V.M.A. ix (4) 182-187.



# Publication Rules of the AVMA

(Continued)

## Italicization

L. A. MERILLAT

Italicization, or italicizing, is defined as the printing of letters or words in sloping type—sloping upward and to the right. In manuscripts for publication, italicized words are distinguished by underscoring, with a straight line, the part to be so printed. In the main, italicizing is a form of emphasis to be used sparingly, better to accomplish that purpose, or a means of giving additional importance to certain terms. The too free use of italics is, therefore, as faulty as to omit them where needed to accomplish these ends.

The following are some of the occasions wherein italics are employed or intended to be employed in AVMA publications:

- a) Words and short phrases to be emphasized.
- b) Foreign words, phrases and short sentences.
- c) Titles of books, articles, and official documents.
- d) Names of periodical publications.
- e) Person's position after his/her name.
- f) Title of court proceedings (court cases).
- g) Algebraic and geometric letters.
- h) Letters or words in lieu of quotations.
- i) Letters (but not figures) identifying paragraphs.
- j) Abbreviation of foreign terms and words.
- k) The names of organisms specifically modified.
- l) Paragraph subheads.

Except where great emphasis is deemed worth while, italicizing long passages in text is disapproved because it connotes lack of the word power required to emphasize otherwise.

a) Words and short phrases are frequently italicized for emphasis only, *e. g.*:

The work shows he *is* skillful,  
That much I *do* know,  
The dog *does* suffer,

are examples of using italicized words to stress a truth or answer a challenge. Noth-

ing else could be that impressive.

The *code of ethics* was studied, is an example where italics set off the meat of the sentence and at the same time serve the same purpose as quotation marks.

b) *Foreign terms*.—As stated in a previous installment of this series (*vide p. 400*), the AVMA makes but few exceptions in the use of italics for foreign words and phrases, whether anglicized or not, the reason being the right of a journal to follow its own style and a lack of agreement among authors. There are, however, a number of thoroughly anglicized words not commonly italicized, *e. g.*:

|                  |                    |
|------------------|--------------------|
| addendum (pl. a) | landau             |
| alias            | levée              |
| alibi            | litterati          |
| alma mater       | mandamus           |
| amateur          | matinée            |
| attaché          | menu               |
| aura             | née                |
| bourgeois        | näive              |
| cabaret          | niche              |
| café             | nil*               |
| camouflage       | nom de plume*      |
| chateau          | onus               |
| chauffeur        | per annum          |
| clientèle        | pemmican           |
| cul-de-sac       | per capita         |
| datum (pl. a)    | pro rata           |
| dementia         | protégé            |
| détour           | pro tempore        |
| élite            | protocol           |
| ensemble*        | queue*             |
| dictum           | quietus            |
| erratum (pl. a)  | rendezvous*        |
| exposé           | résumé             |
| facade           | régime             |
| facsimile        | rôle               |
| fête*            | savant             |
| finis            | sobriquet          |
| gratis           | stein              |
| garrote          | ultimatum (pl. s.) |
| gourmet          | verbatim           |
| guillotine       | versus*            |
| innuendo         | visé               |

\*Signifies words frequently italicized but commonly used.

c) *Titles of books, articles, documents* are italicized in reading material, but not in headlines nor in foot-note references, *e. g.*:

Woodward's *A New American History* is a masterpiece.

The article on *Inclusion Bodies in Fox Distemper* was reviewed.

The law known as the *Harrison Narcotic Act* is rigidly enforced.

The alternative would be to enclose these titles in quotation marks, with initial capitals for the key words. The AVMA style for titles in foot-note references is:

Wisnicky, Walter: *Inclusion Bodies in Fox Distemper*. ci (Jan. 1940), pp. 40.

The use of italics in six point or smaller type complicates printing.

d) *Names of magazines* are italicized except in foot notes, *e. g.*:

The article was published in the *Cornell Veterinarian*.

The *Iowa Veterinarian* is published in Des Moines.

The *American Journal of Veterinary Research* is a quarterly.

e) *Position following a person's name* is more clearly indicated if italicized, *e. g.*:

The officers elected were J. J. Henley, *president*; C. C. Jones, *vice-president*; etc.

J. J. Healy, *Resident Secretary*. Initial capitals are used after signatures to letters, reports, etc.

f) *Titles of court proceedings* and the contesting parties are usually printed in italics.

g) Letters, foreign or English, used in indicating dimensions, volume, or the unknown and known quantities of mathematics, wherever used in medical writing, are italicized, *e. g.*:  $\mu$ ,  $\mu\mu$ ,  $\gamma$ ,  $\beta$ ,  $a$ ,  $b$ ,  $y$ ,  $x$ —for example,  $a + b = y - x$ .

h) Italics are convenient to use in the place of quotation marks, *e. g.*:

He wrote on *pleuropneumonia of cattle*.

His subject was "*Coccidiosis in Chicks*."

i) When letters are used to identify paragraphs, the custom is to print them in italics. In the future, that detail will be followed for the AVMA publications. (*Vide*, this article.)

j). Abbreviations of foreign terms and words, *e. g.*: (*Vide*, page 401).

k) *The names of organisms when specifically modified*. (*Vide*, page 400).

l) Italics are useful for breaking down copy subheads, that is, to classify the theme further, to maintain orderly cohesion, and to insure complete coverage of the subject. Thus:

1) *Diagnosis*.—The diagnosis was confirmed by laboratory methods which revealed, etc., etc.

2) *Symptoms*.—Lassitude, high fever, tremors, nasal discharge, injected conjunctivae, anorexia were pronounced, etc., etc.

By setting off the anamnesis, diagnosis, symptoms, treatment, and the postmortem lesions found under paragraph headings, the author's theme stands out clearly before his readers. The best scientific articles received are sometimes lacking in this respect. Such subheads as *Methods and Materials*, to mention but one example, could generally be subdivided into its two components to good advantage. The trained surgeon, for instance, tells precisely the *material* he assembles for the work and then proceeds to describe *methods*, step by step, from the washing of the site to the placement of the patient in its downy bed (box stall); thus, italicized headings for paragraphs preserve the cohesion characterizing good medical writing.

One should also italicize *see*, *see also*, *vide* (abbreviation for Latin *video*), and *voy*, (contraction of French *voyez*). Whether the English or foreign words are used, they are printed in italics, as follows: *Vide*, page 240; *Voy*, page 25; *See* page 22; *See also* page 110.

It must be confessed that the use of foreign words in this customary fashion is pure affectation, serving no useful purpose whatsoever. "English is a pretty good language."

From these presents, it might be inferred that italicization is freely used in medical writing. The contrary is true. The rule is to use italics sparingly, but not to omit them when absolutely needed for emphasis and clearness. Do not spoil the appearance of an article with italics, nor omit them under the circumstances related above, some of which are admittedly based upon personal opinion.

# SURGERY & OBSTETRICS

AND PROBLEMS OF BREEDING

## Thoracic Neoplasm Causes Ascites

HERBERT E. VIERGUTZ, D.V.M.

*Detroit, Mich.*

THE SUBJECT was a German shepherd male, about 15 years old and weighing 90 pounds, submitted for treatment on account of vomiting spells. The abdomen was greatly distended and so tense that it could not be palpated successfully to detect the presence of ascites with certainty.

A laparotomy, however, was performed to evacuate the contents, which were found

to be four liters of fibrinous ascitic fluid. Inspection and exploration of the peritoneal cavity disclosed nothing abnormal except a bluish-black liver and spleen. The site of the trouble being more remote and severe than anticipated, the owner consented to euthanasia by giving additional pentobarbital which had been employed as the anesthetic.

The autopsy revealed that the cause of the ascites was in the thoracic cavity—a tumor encircling the ascending aorta near the heart that was compressing the pos-

The pathological diagnosis was made by Mark E. Maun, M.D., Wayne University, Detroit, and W. Frederick Hall.

Dr. Viergutz is now Lt. Herbert E. Viergutz, Veterinary Corps, U. S. Army.

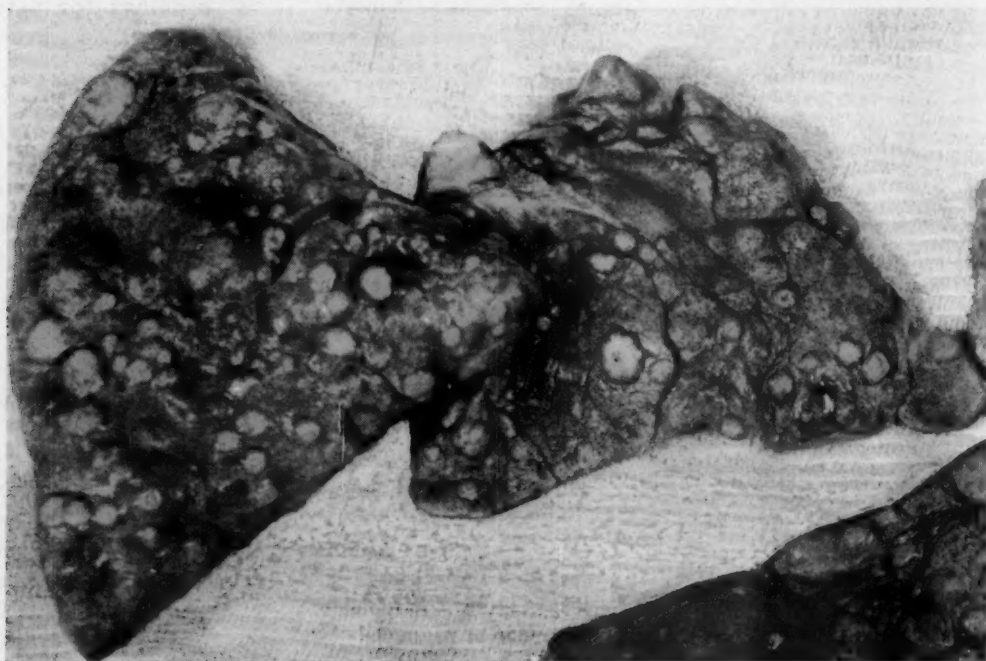


Fig. 1.—Metastatic nodules in the lungs of a dog from the primary tumor encircling the aorta shown in figure 2.

(490)





Fig. 2.—Malignant epithelioma of the ascending aorta of a 15-year-old dog, which, in compressing the posterior vena cava, caused ascites.

terior vena cava. The visceral pleura was studded with small, firm, white elevations.

The specimen, removed intact, was submitted to the Department of Pathology, College of Medicine, Wayne University, for a pathological examination.

*Heart.*—The valves and endocardium were of normal appearance.

*Lungs.*—The surface revealed numerous, sharply circumscribed, white, tumor-like nodules from several millimeters to a centimeter in diameter which, on section of the parenchyma, were found to exist throughout the cut surfaces. The appearance was that of metastatic growths.

*Histologic Examination.*—Sections made from the primary tumor showed it to be composed of small, rather darkly stained cells with an abundance of cytoplasm and

pleomorphic nuclei. The cells were arranged in groups separated by connective septa and they presented mitotic figures. The occurrence of these cells was constant, although in certain zones the connective tissue was more abundant and the cells crowded into smaller groups. There was no acinar arrangement. In one zone, there was a small focus of bone formation. Sections of the myocardium were negative. With the exception of the metastatic tumor nodules, the pulmonary parenchyma was normal. Microscopically, the nodules were identical with the structure of the primary mass encircling the aorta. They were sharply defined from the parenchyma surrounding them, but were not encapsulated.

*Diagnosis.*—The lesions, in appearance, were those of a malignant epithelial neoplasm, possibly of teratomatous origin. Al-

though bronchogenic carcinoma was considered, the bronchi appeared to be normal. The testes were not examined. The adjacent lymph glands examined showed nothing abnormal.

Figure 1 is a picture of the pulmonary nodules showing considerable anthracosis. Figure 2 shows the primary tumor surrounding the aorta, and the two photomicrographs reveal areas of calcification and

bone formation under low and high magnification.

It seems evident that many tumors in dogs, especially of the mammary glands, are of this nature. However, in the various organs where these teratomas may arise, abnormal tissue is often difficult to find even by microscopic examination. The reporting of tumors of this character seems significant.

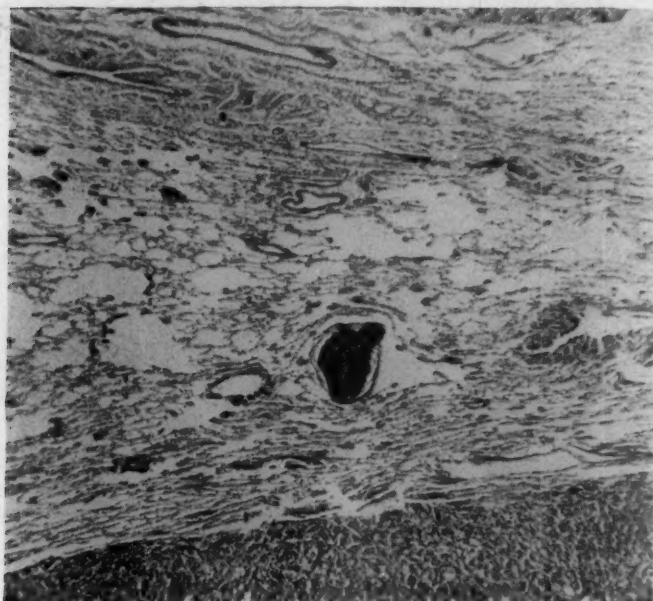


Fig. 3.—The structure of the tumor shown in figure 2 under low magnification—x39.

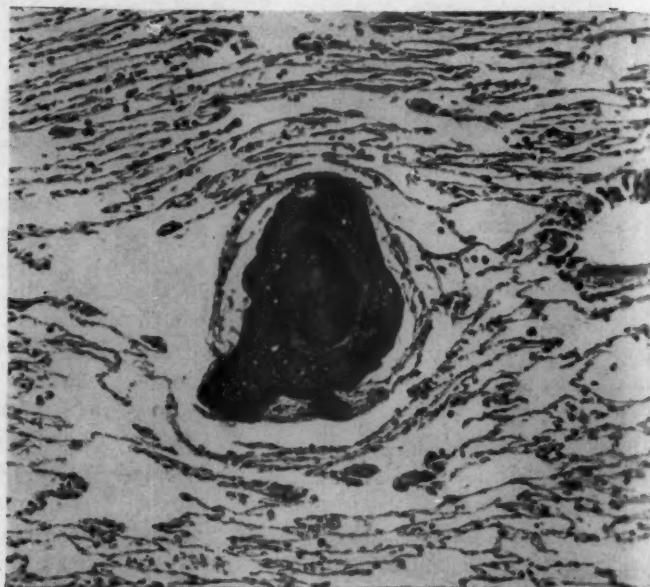


Fig. 4.—Structure of the tumor, shown in figure 2, under higher magnification—x135.

# Cartilage and Bone with Myeloid Marrow in the Aorta of a Dog

W. C. HUEPER, M.D.

*New York City*

THE OCCURRENCE of metaplastic osseous tissue in the large arteries (aorta, femoral, carotid, uterine arteries) of man and animals (dog, rabbit, parrot) on the basis of preceding degenerative and calcifying changes of the media and intima is apparently not rare (Mönckeberg; Huebschmann; Weizmann; Jores; Kaufmann; Rohmer; Cohn; Nieberle; Wolkoff). The

Seegal). Miesowicz and Otto reported the experimental production of cartilagenous lesions in the aorta of rabbits following a treatment with adrenalin, while Harvey recorded the development of osseous tissue containing myeloid marrow in the abdominal aorta of rabbits after the outside of this vessel had been painted with a three per cent solution of silver nitrate and a

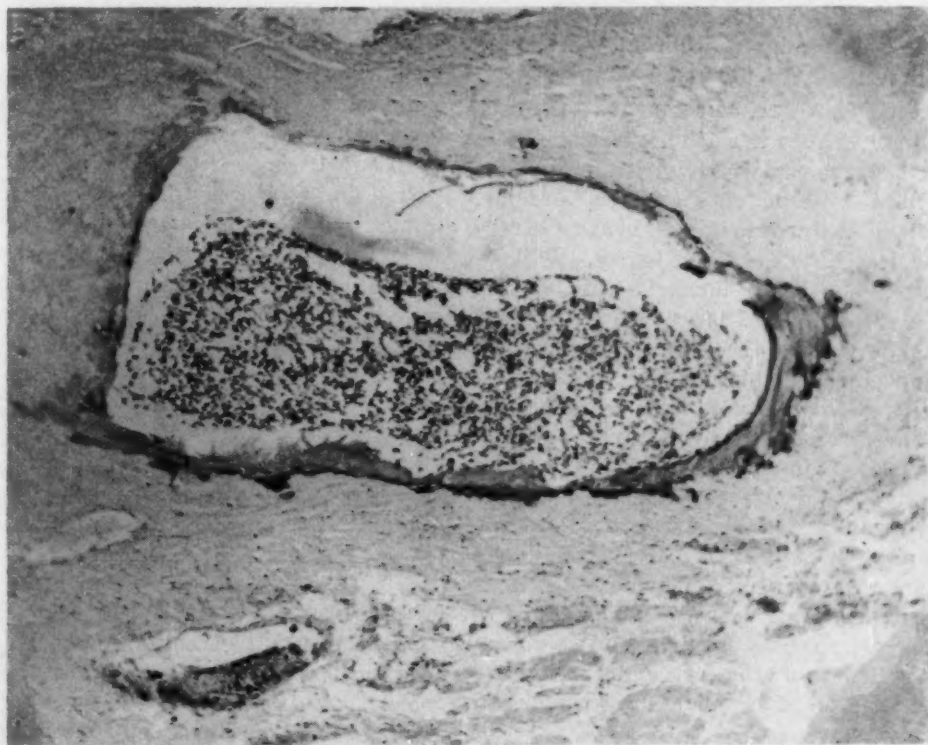


Fig. 1—Osseous cavity surrounded by fibrocartilage and filled with erythromyeloid tissue situated in the fibrous ring of the aorta.

presence of cartilagenous tissue in such lesions is less often seen (Kaufmann; Jores; Huebschmann; Lillie; Spiegl). While some of the bony formations observed contained fat marrow, the occurrence of myeloid marrow is exceptional (Jores; Edelmann; Bunting; Seegal and

two per cent solution of copper sulfate.

The following report, dealing with the occurrence of cartilagenous and osseous tissue containing a large focus of myeloid marrow in the aorta of a dog, is made because this lesion did not develop on the basis of a primary atheromatous or arteriosclerotic change in the aortic wall

From Warner Institute for Therapeutic Research,



represents a unique metaplastic transformation of connective tissue of the fibrous annulus of the aorta.

The dog was a female mongrel of unknown age which died with a hemorrhagic pneumonia five days after the intravenous injection of 10 cc. of a 25 per cent gum arabic solution. Except for a mild foamy transformation of the cytoplasm of some of the liver cells, none of the other organs (hypophysis, thyroid, parathyroid, lymph nodes, spleen, kidney, intestine, bone marrow) examined showed evidence of any pathologic effect of the foreign material introduced. The microscopic study of a section taken from the heart and a part of the interventricular septum and the aortic bulb presented the following picture:

Directly above the attachment of the left, semilunar valve, where the muscular tissue of the heart is replaced by a strong, hyalinized fibrous tissue of the aortic annulus, a small, ill-defined nodule of hyaline cartilage projects into the aortic lumen. A fibrocartilagenous band connects this nodule with a second one of large size situated at the aortic side of the fibrous ring. From the upper pole of this nodule there extends a cavity filled with a densely cellular marrow and surrounded by a layer of bony tissue encased in cartilagenous tissue. The majority of the cells of the marrow portion of this lesion are large mononuclear cells of an immature, myeloid type. They are mixed with some polymorphonuclear leucocytes and a moderate number of nucleated erythroblastic cells and erythrocytes. Some of the reticulum cells are loaded with an amorphous, brown pigment. (Fig. 1).

Cartilagenous deposits in the fibrous skeleton of the heart involving the region of the aortic ring are frequently found in many species (horse, sheep, buffalo, rabbit, rat, mouse), reptiles (turtle, alligator, crocodile), and birds (chicken) (Hueper). In the latter species cartilagenous nodules or plates may be present also in the fibrous ring of the pulmonary artery. An enchondral ossification of these foci may occur in sheep with increasing age.

#### SUMMARY

The occurrence of cartilagenous, osseous and myeloid tissue in the region of the aortic annulus of a dog is reported. This lesion is considered the result of a normoplastic metaplasia of fibrous tissue, which is unrelated to any primary, degenerative, arteriosclerotic or atheromatous change.

#### Tetanus in Two Years of War

In a recent report of the Royal Society of Medicine (*Proc. R.S.M.*, March, 1942) of the incidence of tetanus in a group of about 11,000 wounded men and women—victims of air raids—there were seven cases of tetanus of whom four recovered and three died. The medical record of the four patients who recovered show that they had been given prophylactic doses of antitoxin 7, 10 and 13 days after receiving the casual wound and that none of the seven had been immunized with tetanus toxoid. Of the fatal cases, one was a service man, wounded in France, who was evacuated without record as to prophylactic treatment.

The period of incubation of the fatal cases was 7, 10 and 12 days and of the recovered, 8, 14, 14 and 105 days. The conclusion drawn was that active immunization with tetanus toxoid is of great value and that the fact should be laid before the public.

#### Regulation on Catgut Material

Under a new instruction of the War Production Board packers, who have slaughtered more than 100,000 sheep a year prior to September 8, are forbidden to deliver sheep intestines for any purpose other than for the production of surgical sutures. Purchasers of sheep intestines for the purpose of making surgical sutures are required to certify to that effect to the packer. Normally, 9 yards of a sheep's intestine is used for surgical gut. The remainder is used in the manufacture of fiddle strings, tennis rackets and sausage casings. The order does not apply to small packers. The supply of absorbable sutures is said to be low.

## A Method for Bleeding Swine

B. N. CARLE, D.V.M., and WM. H. DEWHIRST, JR., M.A.

Berkeley, Calif.

IN CURRENT experiments at this station it has been necessary to obtain weekly samples of blood from swine in order to secure clear serum for analysis. Tail and ear bleeding have been practiced, but these methods were tedious and often the blood hemolysed. It was decided to attempt drawing the blood from the anterior vena cava. Brief experimentation proved this to be entirely feasible.

In the beginning, only small pigs of about 25 lb. were used. The following technique



Fig. 1.—Filling 50-cc. syringe from pig in dorsal recumbent position showing site and angle of insertion.

was employed. The pigs were restrained manually in a dorsal recumbent position. A glass syringe with a 20-gauge,  $1\frac{1}{2}$  inch needle was used for drawing the blood. The needle was inserted about 2 cm. on either side of the point of the cariniform cartilage on a line drawn from the point of the cartilage to the base of the ear (fig. 1). The needle was guided inward, downward, and backward until its point was medially situated in the arch between the two first ribs. In this region, the external jugular veins converge to form the anterior vena cava.

From the Division of Veterinary Science, University of California in cooperation with the Bureau of Animal Industry, U. S. Department of Agriculture, and the International Health Division of the Rockefeller Foundation.

Almost immediately posterior, the right and left brachial veins join. In this area, medial to the two first ribs, the needle enters the anterior vena cava. From here blood may be withdrawn or solutions injected (fig. 2).

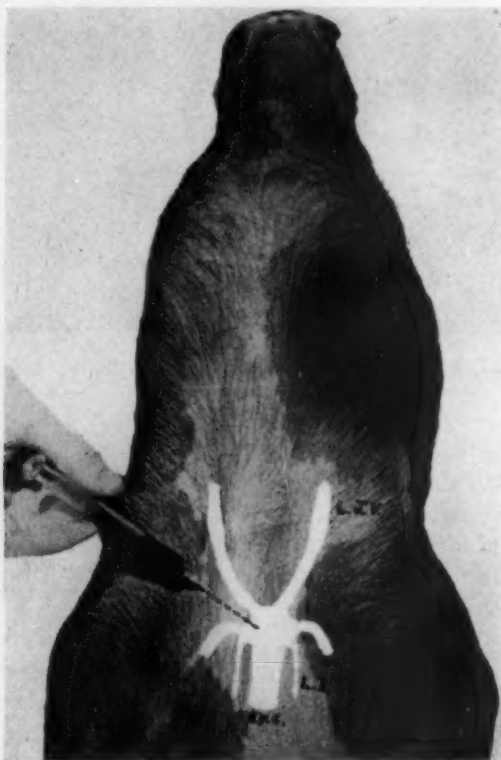


Fig. 2.—Diagram of vessels showing where needle enters anterior vena cava. L. J. V.—Left jugular vein. L. B. V.—Left brachial vein. L. I. T. V.—Left internal thoracic vein. A. V. C.—Anterior vena cava.

This technique was found satisfactory. It is simple, rapid, and apparently does little damage to the pig. To date, 10 pigs have been bled once a week for 12 weeks with no mishap. There has been no hemolysis, and on several occasions the blood was tested and found to be sterile.

The method has been modified somewhat for the bleeding of large hogs where re-

straint in a dorsal recumbent position would be difficult. These can be restrained with a small rope formed into a noose around the snout with the other end tightly held by an assistant or snubbed to a post. When caught in such a manner, the hog tends to pull back on the rope and can then



Fig. 3.—Bleeding 200-pound shoot in standing position.

be bled in a standing position as illustrated (fig. 3). Injections can be made with similar restraint. When an animal is bled standing, the needle is directed inward, upward, and backward from the same point of insertion.

With large swine, it is necessary to use a needle of  $2\frac{1}{2}$  inches or more. Warning must be given, however, regarding the gauge of the needle used. On two occasions, when needles larger than 20-gauge were used, the pigs showed marked dyspnea immediately following withdrawal. Using the above described technique with a 20-gauge needle, no such results occurred in approximately 150 bleedings.

The maximum amount of blood that can be obtained by this technique has not been determined. On several occasions, however, a 50-cc. syringe has been filled numerous times from the same animal with satisfactory results. It seems likely that large amounts of sterile blood could be obtained with a suitable vacuum flask.

#### SUMMARY

A method for bleeding swine from the anterior vena cava is described. This method possesses certain advantages over others for bleeding hogs.

1) It is simple, rapid, and elaborate restraint is not necessary.

2) Relatively large quantities of blood may be easily obtained.

3) The blood may be withdrawn sterilely and with no danger of hemolysis.

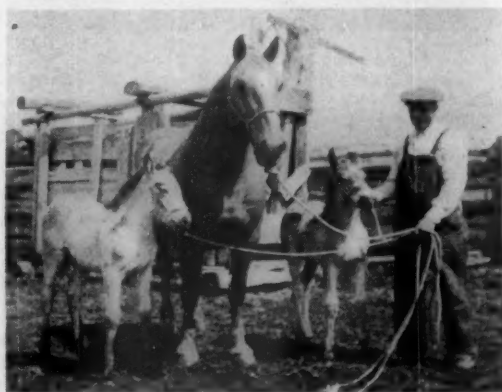
4) Intravenous injection by the same route is equally feasible.

5) When small-gauge needles are used, no detrimental effects on the pigs are noted despite repeated bleedings.

#### Polyglottous Lexicography

Since this global war got under way, the demand for English-Spanish, English-Japanese, English-Chinese, English-German, English-Portuguese dictionaries, and the *vice versa's* has mounted to unprecedented heights, along with a premium on polyglots in the military service of the fighting nations. Columbia University is teaching 16 languages.

#### Another Pair of Twin Foals



—Photo by I. W. Vinsel, Dillon, Mont. Comes additional evidence that Montana is the right place to raise horses and mules. Following the pair of twin mules, born and successfully raised near Billings (*vide* the Journal, Nov. 1942, p. 403), a mare belonging to Earnest Waters, near Dillon, is reported to be the successful dam of a pair of twins, untainted with the blood of *Equus asinus*, proof of which is shown in the accompanying picture, furnished for publication by Dr. I. W. Vinsel, of the latter city.



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# CLINICAL DATA

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The age for heifers to bring their first calf seems to be a problem to many, or some people get in too big a hurry to increase their herds and breed heifers too early in life. Breeding too early is a mistake.—*S. L. Stewart in Kansas Stockman.*

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Clinical veterinary medicine touches its highest ideal in the sanitary work related to the production of certified milk. The reduction of infant mortality and improving the nutritive quality of milk are two of the main objectives of the promoters of that grade.

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American belladonna root is as good as Bulgarian in patients suffering from sleeping sickness (= encephalitis lethargica), according to an article in *The Journal of the American Medical Association*, August 2, 1941.

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Vaccination against influenza (human) which was thought to be "just around the corner" several months ago is not a promising prospect. The discovery of several strains of influenza virus between which there is no cross immunity has dampened the hopes of public health workers.

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The difference of opinion as to the relation of vitamin B to nervous upsets seems to be caused by drawing the same conclusion from entirely different types of experimental work. The results of B<sub>6</sub> (pyridoxine) deficiency cited by Galloway\* appear to show that pigs, chicks, and pups deprived of this factor suffer from spasmodic convulsion and coma which yield quickly to the yeast eluate fraction.

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\* *Iowa Veterinarian*, September-October, 1942, p. 18.

Livestock shipment by truck and community sales is, perhaps, the most perplexing problem the veterinary service has had to solve in protecting the nation's food supply from being depleted by diseases of farm animals.

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The liver is from 1 to 5 per cent fat, but in disease the amount may reach 30 per cent. *Pâté de fois gras* is the liver of geese almost entirely replaced by fat.

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Lake, Pratt and Wright (*J.A.M.A.*, June 27, 1942) incriminate the climbing of stair and other strain on the legs as one of the main causes of hardening of the arteries (=arteriosclerosis).

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The London correspondent to the *Journal of the American Medical Association* writes that while typhus is a wartime scourge in continental Europe, it has not spread to Great Britain where elaborate preventive precautions are being taken.

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Apparently, the anti-gray hair vitamin has been over-touted, according to a recent radio broadcast by Dr. Fishbein, and an article on the subject in the *Journal of the American Medical Association* of January 24, 1942.

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Pyrethrum in colloidal solution is insecticide in high dilution. Larvae and pupae of *Culex* and *Armigeres* are killed instantly at 1:10,000. A solution of 1:20,000 is deadly to them in 20 minutes, and at 1:50,000 half of the insects exposed for 20 minutes are dead. A slight insecticide action is obtained from a dilution 1:100,000.

The liver of the shark, according to size of the fish, yields from 2 to 25 gallons of oil which, pound for pound, is almost as valuable in the war effort as tin and rubber. Shark fishing in Florida and California catapulted into a major industry, when shark liver was found to be superior to that of cod and halibut as a source of vitamins A and D.

Colchicum, rheumatism remedy of the old school physicians, acts closer to the phenomena of living processes than any other drug of the pharmacopeia. Its active principle, colchicine, actually doubles the chromosomes, the intranuclear factors of growth, and the heredity carriers in the germ cells.

### Sulfadiazine

Sulfadiazine is more quickly absorbed in the digestive tract than either sulfapyridine or sulfathiasole. It disappears from the blood more slowly, and the amount conjugated in the blood is less than for the other two. It penetrates well into the splanchnic cavities and is widely distributed in the body fluids. The initial doses in man are 2, 3, 4, and 5 Gm., followed with 1 Gm. doses every six hours.

### Biotin

Biotin, described by Lucas in 1924, was named vitamin H by Gregory of Germany, in 1931, when he discovered that this substance was necessary to prevent egg-white from being injurious for man. It was named biotin by Kögl, also of Germany, in 1935. In 1936, Elvehjem, of Wisconsin described this substance under the name of factor W.

Avitaminosis H is manifested mainly by cutaneous alterations: dryness, desquamation, and pallor with general symptoms of anorexia, lassitude, heart pains, and muscular soreness. In chickens, (Elvehjem, *et al.*) the manifestation is a specific dermatitis. It is used in the treatment of certain skin diseases in human medicine.

The fact that a great deal of surgery in animals is done in a veritable mist of microbes is no reason for disobeying the teachings of Sir Joseph Lister and the modern ways evolved therefrom.

Soiled wounds are more likely to be "washed dirty" than disinfected from the use of antiseptic solutions.

### Torsion of the Uterus in Cows

My method of correcting torsion of the uterus in cows, differs from those recently described in the JOURNAL. After years of experience with such methods as laparotomy of the right flank, rolling the cow's body, and hanging her body by the hind legs, I discovered a method that has proved to be quicker and less painful to both the patient and obstetrician.

On a wintry night, I was confronted with a cow due to freshen that was making no progress toward delivery of her fetus. Examination disclosed torsion of the uterus. In this case, it was possible to pass the hand through the cervix. In that position, with the unpleasant thought of rolling the cow, which had been the method previously employed, it was found that there was no room in the stable to carry out such a procedure.

By grasping a prominent part of the body of the fetus and rocking it to and fro, I rocked it in the wrong direction as much as my strength permitted, then suddenly to the right direction, following with a hard push in the right direction. Thus, the torsion was straightened out. In the past seven or eight years, the method has failed me but once. The method requires considerable strength and, of course, can be employed only when the hand can be passed through the cervix.—Lynn D. Peterson, V.M.D., Lewiston, Pa.

Vitamin K, the antihemorrhagic vitamin, was named for "Koagulation," the Germanic and Scandinavian spelling of English "coagulation." It was first designated the "prothrombin factor."

## Microbial Microbicides

The discovery of the germ-killing action of penicillin and tyrothricin—products of microbial life—is leading to the search for other germ killers of the same source and the same genre. A chemical extractive of an earth fungus has recently been named *fumigacin*, and another called *clavacin* obtained from stable manure has been announced in scientific circles. Other names brought into this category are *pyocyanase*, *actinomycin* and *Zephiran* (see *Science*, Aug 28, and *Science News Letter*, Sept. 5 for details). In this group lies new hope of inactivating, neutralizing, and killing germ life of the disease-causing type, according to recent announcements.

## Ariboflavinosis in Man

Riboflavin ( $B_2$ ) deficiency in man is manifested by local symptoms about the mouth and eyes associated with more or less gastrointestinal trouble and general malaise. Fissures of the lips at the commissures of the mouth (generally bilateral) and of the *alae nasi* are common local signs of this avitaminosis. The ocular changes named in the literature are: photophobia, dim vision, night blindness, defective accommodation, mydriasis and keratitis. Among the digestive troubles are glossitis, dysphagia, achlorhydria, gastric discomfort, nausea, diarrhea. The lesioned lips (cheilosis), however, are a typical part of the picture.

Of fifteen cases described by Jolliffe, Fein and Rosenbaum (1939)<sup>1</sup> all but one were polyavitaminoses ( $B_1$ ,  $B_2$  and C combined). Since then many cases of cheilosis have been found to respond to riboflavin alone.

Ariboflavinosis responds to 3 to 5 mg. of synthetic riboflavin daily.<sup>2</sup>

<sup>1</sup>Cited by Jolliffe, N. Bulletin of the New York Academy of Medicine, xvii (March, 1941), p. 198.  
<sup>2</sup>Snydenstricker, A. D. et al. Abstract, J.A.M.A. cxvi (May 24, 1941) p. 2437.

According to an estimate made by the U. S. Department of Commerce the income of the United States for 1941 was \$94,500,000,000.

Sutures drawn taut are generally a menace to regeneration, and in animals they seldom serve the intended purpose.

Vitamin C given internally prevents heat exhaustion and is also employed in the treatment thereof. Foulger (*Science*, June 19, 1942) found this vitamin effective in a trial on men working in hot places.

## Microbic Warfare

Scattering disease germs around by the enemy as a fifth column project is not as likely to be widely practiced as many fear. Vaccination has put a crimp in that kind of warfare. Tetanus, smallpox, typhoid, diphtheria, and yellow fever might be easy enough to implant, but the results would be negligible. In animals, the greatest danger lies in foot-and-mouth disease. But, even here, the saboteurs would not succeed before they were caught and hanged, provided the drug-store-farm-hand system of animal-disease control doesn't get too much of a foot hold.

## Some Good Advice to Farmers\*

*Stomach worms* are the most common parasites affecting Illinois farm flocks. They live in the fourth stomach and cause anemia, unthriftiness, lameness, bottle-neck, and even death.

*Nodular worms* live in the large intestine of sheep. They cause unthriftiness and sometimes death. The nodules made in the intestine by the immature worms render the intestine unfit for use as surgical sutures and sausage casings.

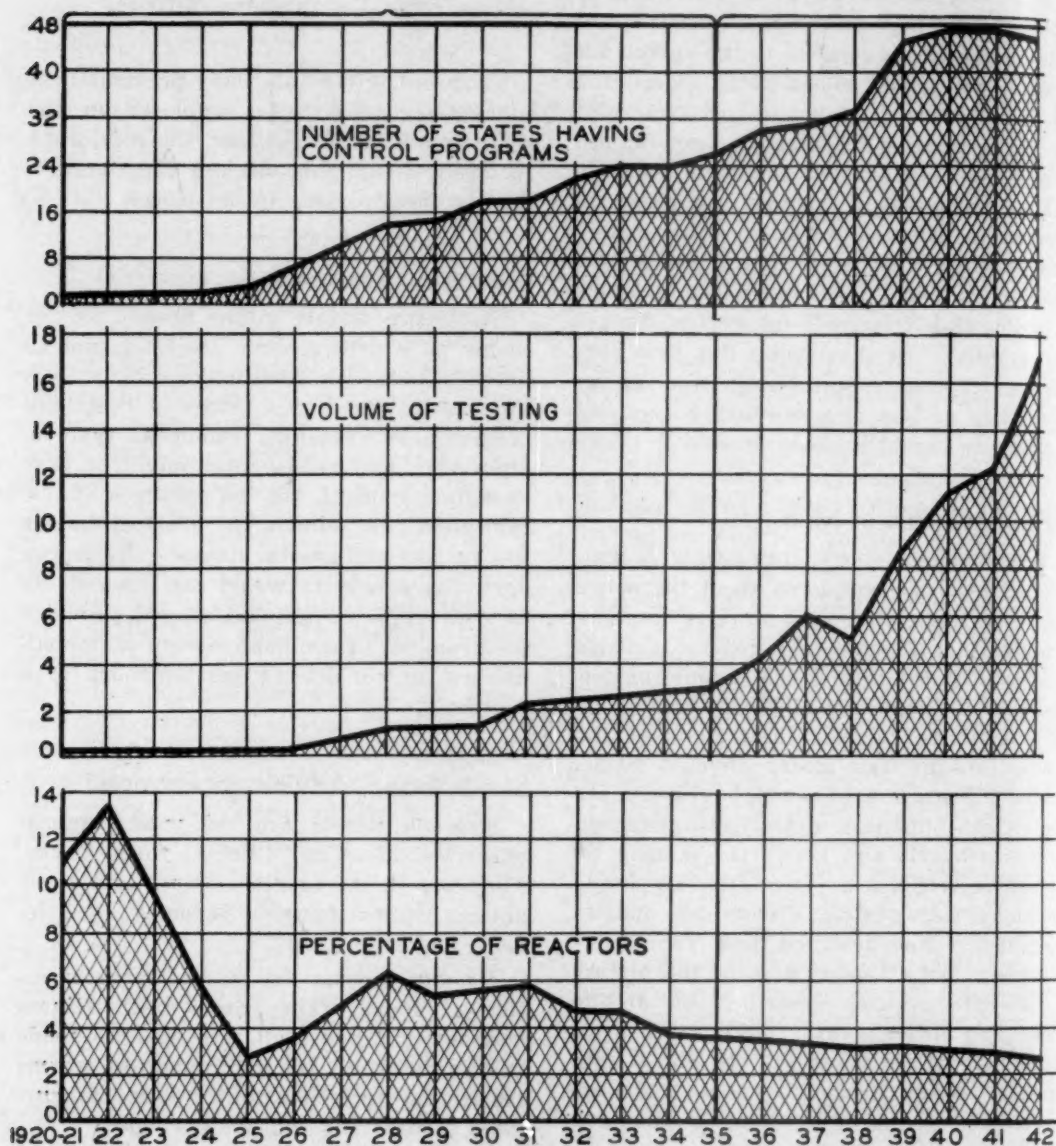
*Bankrupt worms*, although very small, cause some unthriftiness and even death. They are found in the fourth stomach and the small intestine.

*Lungworms* cause coughing, sneezing, and unthriftiness in sheep. As the name implies, they infest the lungs. Since no treatment is effective, their control depends upon preventive measures.

\*From the Department of Animal Pathology and Hygiene, University of Illinois.



## Operations of the Poultry Improvement Plan



The key to this illustration (3 charts in 1) lies in the figures at the bottom, which are the years from 1920 to the end of the fiscal year 1941-1942. In the top chart, the figures to the left signify the number of states participating; the ones on the margin of the middle chart indicate the millions of fowls tested; and the figures on the lower chart, as the chart shows on its face, are the percentages of reactors removed or recommended for removal.

PROGRESS IN the pullorum-control program, conducted under the National Poultry Improvement Plan and fostered in all possible respects by the AVMA, was the subject of a graphic release by the U. S. Bureau of

Animal Industry in August—graphic in description. The charts are reproduced herewith. Beginning pullorum-control work from practically zero in 1920, the plan gradually took form until in the fiscal year

1941-1942 the total of fowl officially tested reached the all-time record of nearly 17 million. In 1921-1922, the number tested was but slightly over 32,000 of which as high as 22.30 per cent reacted. The high mark in reactors for the 17 million tested in 1941-1942 was but 8.05 per cent and as low in some states as 0.02 per cent. Without going into details, it is evident the principle

of eradication, in lieu of compromising with animal diseases, is taking form in the poultry industry as it has long since done in other branches of animal production. A happy trend is the changed attitude of poultrymen toward veterinary science. There is pleasure, profit, and satisfaction in reproducing the Bureau's documentation of the "pullorum" situation.

Summary of Organized Pullorum-testing Work with Chickens Under Official Supervision in the United States

| TESTING YEAR | STATES REPORTING | BIRDS TESTED<br>(FIRST TEST) | REACTORS |         | RANGE OF STATE<br>AVERAGES FOR PER-<br>CENT OF REACTORS |       | PERCENT IN-<br>CREASE IN<br>NUMBER<br>TESTED OVER<br>PREVIOUS<br>YEAR |
|--------------|------------------|------------------------------|----------|---------|---|-------|---|
|              |                  |                              | NUMBER   | PERCENT | HIGH  | LOW   |   |
| 1920-21      | 2                | 36,118                       | 3,963    | 10.97   | 12.50   | 7.66  |   |
| 1921-22      | 2                | 32,605                       | 4,388    | 13.46   | 22.30   | 12.65 | 9.74  |
| 1922-23      | 2                | 40,260                       | 3,406    | 8.46    | 12.80   | 7.60  | 23.48   |
| 1923-24      | 2                | 72,780                       | 4,137    | 5.68    | 6.53  | 1.85  | 80.77   |
| 1924-25      | 3                | 88,905                       | 2,434    | 2.74    | 5.70  | 1.28  | 22.16   |
| 1925-26      | 7                | 246,032                      | 8,807    | 3.58    | 7.60  | 2.13  | 176.74  |
| 1926-27      | 10               | 568,028                      | 29,047   | 5.11    | 20.00   | 1.47  | 130.88  |
| 1927-28      | 14               | 1,116,764                    | 70,760   | 6.33    | 21.00   | 1.60  | 96.60   |
| 1928-29      | 15               | 1,196,261                    | 65,805   | 5.50    | 19.00   | 1.22  | 7.12  |
| 1929-30      | 18               | 1,627,133                    | 90,036   | 5.53    | 14.53   | .67   | 36.02   |
| 1930-31      | 18               | 2,057,968                    | 119,872  | 5.82    | 15.73   | .47   | 26.48   |
| 1931-32      | 22               | 2,274,367                    | 108,328  | 4.76    | 49.10   | .49   | 10.52   |
| 1932-33      | 24               | 2,509,066                    | 116,930  | 4.66    | 22.00   | .44   | 10.32   |
| 1933-34      | 24               | 2,640,366                    | 99,540   | 3.77    | 13.27   | .16   | 5.23  |
| 1934-35      | 26               | 3,003,219                    | 111,858  | 3.72    | 15.50   | .046  | 13.74   |
| 1935-36      | 30               | 4,322,800                    | 158,511  | 3.67    | 10.40   | .004  | 43.93   |
| 1936-37      | 31               | 6,022,966                    | 200,496  | 3.33    | 7.96  | .07   | 39.33   |
| 1937-38      | 33               | 5,270,477                    | 170,077  | 3.23    | 18.50   | .17   | -12.49  |
| 1938-39      | 45               | 8,741,706                    | 283,025  | 3.24    | 9.40  | .05   | 65.86   |
| 1939-40      | 47               | 11,105,307                   | 343,861  | 3.10    | 11.10   | .04   | 27.04   |
| 1940-41      | 47               | 12,214,011                   | 350,887  | 2.87    | 8.90  | .002  | 9.98  |
| 1941-42      | 46               | 16,959,214                   | 447,679  | 2.64    | 8.05  | .02   | 38.85   |

## The Chicago Fat Stock and Carlot Competition



In lieu of the International Livestock Exposition, which was held without interruption for half a century, a show comparable to that contest of other years will be held in the International Amphitheatre, Union Stock Yards, December 2-5, 1942, where veterinarians attending the annual meeting of the United States Live Stock Sanitary Association will find an exhibition of America's best cattle, sheep, and hogs, classified practically the same as for the regular exposition, including premiums and awards.

### A Fatal Case of Spontaneous Malaria in a Canary

For the past 25 years the canary has been widely used throughout the United States as a laboratory subject for malaria research. Canaries are susceptible to most of the species of *Plasmodium* which have been isolated from passeriform birds. During the extensive research that has been done on these birds by many workers, in examination prior to their use, spontaneous malaria infections have been rare and a fatal case in such a bird has not, to the best of our knowledge, been reported in this country. Birds for this research have been obtained from commercial dealers and independent breeders, raising birds as a hobby. The senior author has examined more than 150 canaries, obtained from dealers in southern California during the past two years, without finding a single spontaneous infection.

On July 22, 1942, a male canary was brought to the Los Angeles Wildlife Disease Research Station of the Fish and Wildlife Service by a local bird fancier, for autopsy and diagnosis. The canary was hatched during 1941 in Temple City, a suburb of Los Angeles. This bird was housed with five other male canaries in an outdoor flying cage. The bird had shown signs of some malady for 36 hours prior to death. The feathers were ruffled and it had difficulty in maintaining balance on the perches. Twenty-four hours before death it had been isolated in a small cage. There was no noticeable loss of appetite. The flying cage in which this bird had been housed was constructed of  $\frac{5}{8}$  inch wire mesh. The coarse meshed wire gave ready access to mosquitoes. Some mosquitoes were observed about the cages when this aviary was subsequently inspected by the junior author.

Autopsy revealed a dark, greatly enlarged spleen, approximately four times its normal size. The liver was dark, slightly enlarged and friable. All other organs appeared normal, macroscopically. No parasites were found in intestinal smears. The

bird was not emaciated. Blood smears taken from the heart blood revealed approximately one-third of the red blood cells to be infected with *Plasmodium cathemerium*, a common parasite of sparrows and other small birds in southern California. Two days later, blood smears were obtained from the other five canaries in the same flight cage. All appeared in good physical condition and no parasites were found.—C. M. Harmon, D.Sc., California Department of Natural Resources, Division of Fish and Game and E. L. Vail, Fish and Wildlife Service, U.S. Department of the Interior, San Francisco.

### Isolation of an Acid-Fast Bacillus from a Hawk

On Sept. 18, 1941, two hawks, probably the marsh hawk, *Circus hudsonius*, were taken near Dunsith, North Dakota, incident to field studies on encephalitis. Upon autopsy it was observed that the liver of one had numerous necrotic foci resembling those found in avian tuberculosis and smear preparations showed numerous acid-fast bacilli. A portion of the liver was inoculated into two rabbits and two guinea pigs. Approximately three months later the animals were killed for autopsy. The guinea pigs showed no gross lesions. The spleen of one rabbit had numerous tubercles and several of the lymph nodes in the omentum and mesenteries were enlarged and caseous. Smears from these tissues showed large numbers of acid-fast bacilli, which were apparently *Mycobacterium avium*, the agent of avian tuberculosis. Histologic sections made of the hawk liver by C. L. Davis, of the Bureau of Animal Industry, showed "many caseous tubercles containing numerous tubercle bacilli."—E. A. Steinhilber, Associate Bacteriologist, and Glen M. Kohls, Associate Entomologist, U. S. Public Health Service, Rocky Mountain Laboratory, Hamilton, Montana.

The incidence of tuberculosis is increasing in war-torn Europe, according to the Metropolitan Life Insurance Company.



### Hexamita sp. from the Ringed-neck Pheasant

On July 15, 1942, the manager of one of the state holding farms for game birds brought to our Davis laboratory two sick 8-week-old pheasants (*Phasianus torquatus*). These had been selected as representative of a disease which had started the previous week in one pen, and had spread to three others. All were located on one lane, and the disease had not spread to other sections of the farm. The symptoms described were loss of coordination without noticeable loss of appetite, and no diarrhea. In most cases, the birds died before symptoms were noticed. The mortality in each pen exceeded 50 per cent.

One of the two birds brought to the laboratory was too weak to stand, and lay in a comatose condition with its head thrown back over its neck. The second appeared weak, but was able to fly when excited. Its temperature was 107.2 F. There was no paralysis.

Necropsy showed the birds to be in good flesh, with some food in the crop. The duodenal mucous membranes of both birds were congested; the ileums contained excessive amber fluid, but there was no appreciable lack of tone in either. Microscopic examination revealed no *Hexamita* in the duodenum. There were a few in the jejunum of the sicker bird but none in the other. In both, however, there were large numbers of *Hexamita* in the ileums and cecal tonsils. A few coccidial oöcysts were present in the cecums of one bird, and none in the other.

Bacteriological studies of heart blood, spleen, liver and intestinal contents failed to yield any organism that might have caused the losses.

A visit to the game farm was made one month later to collect, if possible, some survivors of the outbreak for the purpose of obtaining *Hexamita* for transmission studies. The manager had followed our suggestions to depopulate the pens in which there were sick birds at the time and no others had become ill. Three birds were

obtained from a pen adjoining the infected pens in the hope that they might be infected with *Hexamita*. None were found on autopsy, but intestinal contents and feces were fed and injected into the rectums of several 5-week-old protozoa-free poult. These were killed in about a week, but no *Hexamita* were found.

Without transmission studies, it was impossible to determine whether the species found in these pheasants was *Hexamita meleagridis*, the causative agent of hexamitiasis in turkeys, McNeill, Hinshaw and Kofoid.<sup>1</sup> Morphologically, it is indistinguishable from the turkey species. Likewise, until transmission studies are made, it is impossible to state whether the losses were due to hexamitiasis, although the clinical picture indicates that *Hexamita* was responsible.

This report adds pheasants to a checklist of hosts of *Hexamita* given in the reference mentioned above. Recently, Duckworth and Boyd<sup>2</sup> reported the finding by Stover of *Hexamita* in a month-old, white pea-fowl (species not determined).

—W. R. Hinshaw D.V.M., Ph.D., and E. McNeil, Ph.D., Division of Veterinary Science, University of California, Davis.

<sup>1</sup>McNeill, E., Hinshaw, W. R., and Kofoid, C. A.: *Hexamita meleagridis* sp. nov. from the Turkey. Amer. Jour. Hyg., xxxiv (1941) (2) Sec. C., pp. 71-84.

<sup>2</sup>Duckworth, C. U. and Boyd, A. G.: Bureau of Livestock Disease Control. Calif. Dept. Agr. Bul., 30 (1941) (4), p. 456.

*Brucella suis*, specific cause of swine brucellosis, costs our country's hog breeders several million dollars each year. This strain is also responsible for a large majority of undulant fever cases—human brucellosis—that are growing too numerous for comfort. Infection in both swine and man is especially prevalent in the Midwest . . . In contrast to cattle, the herd boar is an important factor in the transmission of (swine) contagious abortion.—From an article on Swine Brucellosis by A. H. Quin in *Successful Farming*.

### Mustard Gas (Dichloridethyl Sulfide) and Rubber Gloves

Veterinary officers of Meuse-Argonne experience (1918) will applaud recent warnings to the effect that rubber gloves do not protect the hands against mustard-gas burns, recalling that this war chemical dissolves rubber. Mustard gas eats its way through the rubber covering and given amounts spread over greater areas than if the hands were bare. The rubber, or any covering, spreads irritation which remains local on the bare hands.

Should war gases again become as routinely used as on the battle terrain of World War I, methods of prevention and decontamination may be worth knowing.

### The Local Treatment of Poliomyelitis (Infantile Paralysis)

The Sister Kenny treatment for "polio" has brought contradictory reports from hither and yon into the pages of medical literature. Having come into the medical field through the back door, it was quite natural and proper for the orthodox to look askance at the intrusion. Even veterinarians who also have things neurologic to ponder have wondered about the marvelous results claimed for a peripheral treatment that ignores the central injury—injury that does not repair because nervous tissue is not famous for its power to regenerate. Yet, Sister Kenny's treatment is unmistakably replacing the rigid splinting of former days. Says Levin in *Illinois Medical Journal*, April, 1942, "Rigid splinting is not only on its way out but is out." Ober (*J. A. M. A.*, Oct. 17, 1942) points out that the pathology of infantile paralysis needs revision. There are changes in the muscles, bones, bladder, bowels and sometimes the skin which cannot by any stretch of the imagination be charged to the damaged anterior horns of the cord. Anyhow, expert nursing, hydrotherapy, gentle massage with a bit of psychiatry thrown in has become standard treatment for poliomyelitis, thanks to the experiences of a resourceful nurse.

The aquatic origin of mammals is at least partly proved by the fact that all species of them can swim.

### Wheat as Stock Feed

"Wheat must replace some corn as feed" is the caption of a release of the press service of the USDA. We are producing wheat faster than using it; the reverse is the case with corn. Thousands of bushels of wheat are being piled on the ground for lack of storage while the corn reserve is declining, as the annual use of it is mounting by millions of bushels. In 1942, 150 million bushels more corn was used than was produced. The "Ever Normal Granary" is credited with the breaking of all records in livestock production. So, wheat will have to be used for feeding stock. Increasing corn acreage is not possible since Cornbelt farmers have turned to soybeans for oil and hemp for cordage.

An obstacle to feeding wheat is that the farmer has always regarded wheat as a cash crop. Moreover, wheat has to be processed before it can be fed to cattle, poultry, hogs and horses. Its food value is not questioned when mixed with oil-seed cakes, such as linseed, cottonseed, soybean or peanuts. Both the proteins of wheat and corn are deficient in certain amino acids which these contain.

### Vitamin A Loss in Stored Corn

As C. C. Hastings, member-at-large of the Executive Board, pointed out in the *Journal* more than a year ago, corn stored for two years loses much of its content of vitamin A. This observation is confirmed by C. C. Cumberson, of the department of animal husbandry, Iowa State College (*Country Gentleman*, Oct. 1942), who points out that many feeders of cattle forced to feed old corn, found some of their steers suffering from the characteristic anasarca of vitamin-A deficiency. When old corn is fed, trouble of this sort can be prevented by feeding a good quality of alfalfa, or in season, letting the feeder cattle run at pasture.

Food resources and mineral resources are indispensable to the winning of World War II.

### An Exotic Virus Disease of Hogs

In his address before the recent Chicago meeting, Chief Mohler of the United States Bureau of Animal Industry mentioned the presence of a swine disease in Africa, resembling our hog cholera, which does not respond to the serum-virus vaccination of Dorset . . . "Let us, therefore," said Dr. Mohler, "be on sentry duty, so to speak, for the detection of unusual disease conditions."

In our highly congested swine populations, there is no telling the amount of harm the introduction of such a disease into the United States might cause.

### A Human Case of Foot-and-Mouth Disease

Inasmuch as there had been no foot-and-mouth disease reported in Hungary, the infection was evidently contracted by the handling of meat exposed for sale. In this case the cause was shaking hands. Conjunctivitis and ciliary infection developed, leaving the cornea free. The nasal third of the palpebral margin suppurated and was covered with a partly adherent membrane. Lymph nodes at the chin and neck were enlarged and sensitive, and the eyelids edematous. Treated locally with antiseptics, recovery occurred in eight days.

The author describes the usual human case of foot-and-mouth disease as a febrile infection manifested by nausea, salivation, offensive breath, vesicles on the lips, fingers, arms, buccal mucosa, pharynx and conjunctiva, pain in the limbs and swelling of the related lymph nodes.—*The Bucharest Correspondent to the Journal of the American Medical Association, May 16, 1942, p. 281.*

The prevention of inflation—buying government paper—is a simple remedy for a grave disease.

### The Commercial Biological Laboratory

Speaking only for veterinary medicine, leaving human medicine to speak for itself, this "war of survival" makes the laboratories—scientific equipment, personnel, and facilities for distribution—the cynosure of all eyes, for without them the war effort, so far as food production is concerned, would bog down. While the manufacture of actual war material has necessitated the making of unprecedented changes and new factory installations, a survey of the "factories" supplying the American farmer with the weapons required to prevent disease from wiping out a large proportion of his livestock would reveal an array of means, methods and men ready and alert to meet any emergency that comes along. In short, the peacetime development of commercial biological laboratories serving American agriculture is a power behind the army's barricades which, at least, the veterinary profession understands. To encourage and support them and to insist that their products are properly employed are war efforts of the highest denomination.

### Anti-Vaccinationists

There is no doubt among the fair-minded that typhoid fever, smallpox, tetanus and diphtheria could be practically exterminated by vaccination. The proof is the extraordinary health of the soldiers of World War II, if the lesson taught in World War I, is so soon forgotten. Yet in the United States, now fighting for its very soul, there are obstructionists who would let these and other plagues run riot to satisfy their unfounded beliefs. North Dakota, for example, has a law forbidding any form of vaccination as a precedent to admission to "any private or public school or college or for the exercise of any right." A survey made by the U. S. Public Health Service (*Public Health Reports, March 6, 1942*) reveals a state of unbelievable affairs in this respect in many states. Obviously, there are internal things to fight for, one of which is the protection of one's family against organized bigotry.



### Poliomyelitis (Infantile Paralysis) and Tonsillitis

The occurrence of five cases of severe bulbar poliomyelitis in one family with three deaths following tonsillectomy is reported by Francis, Krill, Toomey, and Mack (*J.A.M.A.* Aug. 22, 1942). The accident occurred at Akron, Ohio in August and September, 1941. The authors attribute the misfortune to inapparent infection aroused by the operations performed. The danger of extirpating tonsils in communities where poliomyelitis exists or during the season when the disease is most likely to occur is emphasized in the summary of their extensive report.

### Therapy of Common Anemias

Anemias result from (1) loss of volume by bleeding, (2) rapid blood destruction, and (3) inadequate blood formation. The latter, and particularly the iron-deficiency type, is the most important of the common anemias. It includes the hypochromic anemia of infancy, childhood, adolescence, pregnancy, and that of chronic blood loss. In these, as a rule, the iron intake is insufficient and besides there is a tendency toward smallness of the red cells. Although the most common in females it is nevertheless the type seen most frequently in males.

Among the causes may be mentioned, low iron intake, the demands of pregnancy, lactation and growth, low absorption in the digestive tract, and the effect of acute or chronic diseases on the absorption and utilization of iron. About 80 per cent of somatic iron is in the blood and the blood is its carrier. Acute hemorrhage is not as serious a cause as chronic losses [as a cause of anemia], since the blood, even though 50 per cent of its volume is lost, is able to restore its iron by drawing upon the reserve and the normal intake. Hemorrhoids, peptic ulcers, newgrowths and abnormal menstruation account for most of the cases of iron-deficiency anemia in adults. Faulty nutrition is a common cause in the young and adolescent owing to the demands for

growth, although other conditions may intervene.

More than half of healthy females develop anemia during pregnancy and where preventive measures are not taken, the percentage is higher. The demands exceed the intake. Blood studies during pregnancy are, therefore, essential. Iron deficiency in pregnancy causes anemia of the hypochromic, microcytic variety, less frequently the macrocytic (pernicious) type; it, however, differs from true pernicious anemia in not having achlohydria, leukopenia, and spinal involvement associated with it, and like pernicious anemia, in not responding to iron therapy. Its therapeutic needs are meat, eggs, milk, yeast and liver extract to which, conversely, the hypochromic type does not respond. The two types, however, require adequate intakes of proteins of good quality, minerals and vitamins plus iron in form that is well tolerated. A preparation consisting of concentrated extract of hog's stomach, neutral iron, sodium citrate, and vitamins B<sub>1</sub> and B<sub>2</sub>, constitutes the appropriate drug treatment. [*Therapeutic Notes, June, 1942, pp. 187-191.*]



# EDITORIAL

## Why the Annual Dues Have Been Increased

Members who do not follow verbatim the printed reports of the Executive Board and House of Representatives in the annual "Proceedings Number," may have missed the announcement in the November issue relating to raising the annual dues from five dollars to seven dollars, effective January 1, 1943. The action was taken at the Chicago (1942) meeting when the House of Representatives, pursuant to the prescribed method of amending the administrative by-laws, voted unanimously in favor of the proposal made at the 1941 annual meeting.

The decision to increase the annual dues two dollars a year was made after a survey of several years by various councils familiar with the present and future needs of the veterinary profession, working through the agency of the national association. Briefly told, lack of sufficient money is a major deterrent to the development of our cause and in view of our low numerical strength, we cannot hope to make a respectable showing along with other branches of science without a higher revenue from the individual members. The veterinary profession has attained its present level in spite of the low income of its organizations, but that the level attained is comparable to its importance to the people and to the indispensable industry it is delegated to serve is far from the truth. Were we content to remain the forgotten recluse of a great nation and but the fringe of its greatest resource, there would be no need of raising dues; but inasmuch as there is moral fiber and a certain degree of respectability to maintain, there is no alternative for a numerically small group such as ours but to foot the bills required to build up the kind of inherent discipline and

public relations which win the wholehearted support of the people and of the other branches of science.

The Association has swung into a self-assuring stride, which has nationalized the popularity of veterinary medicine in the war effort, but the swing was not war-made. It was started in 1937 when a Board of Governors was created and authorized to assume full administrative responsibility and to initiate a program for increasing the membership, augmenting income, and expanding the activities of the Association.

The program included the improvement of the Association's "literary front" in both technical and professional material. The *Journal of the American Veterinary Association* and the *American Journal of Veterinary Research* are intended to be the type of periodicals believed to meet the needs and fulfill the purposes of the veterinary profession. But literature of that class is costly and can only be sustained and improved by the painstaking efforts of capable employees experienced in executive and literary work.

The Association has highly important standing and special committees; these cannot function properly nor demonstrate their full potential value without greater financial support than in the past. From year to year, these committees labor conscientiously, but under handicaps; it is long past the time that this situation should be corrected.

Every year the Association is called upon more and more by governmental agencies, and by scientific and technical organizations, to carry on work which is most important to the membership if it is to participate fully in the activities expected of

a professional organization. The public relations value of such joint activities cannot be overemphasized. Moreover, a greatly expanded educational program to teach what the veterinary profession is doing is absolutely necessary from the public relations standpoint. A modest beginning has been made but much remains to be done.

Veterinarians, as individuals, have never been slow to uphold those things which contribute to the upbuilding of their science and their profession. The administrative and executive officers of the Association believe they can depend fully upon the continued and unstinted support of the membership in the effort to provide ways and means for a more effective national organization.

### The Indicted Serum Producers

Following the filing of a "Demurrer and Motion to Quash" the indictment of the anti-hog-cholera serum and hog-cholera virus producers, which was returned by a federal grand jury in May, 1942, on the pretense that they were makers and distributors of "animal medicines," Special Attorney Gerald A. Herrick, in behalf of the government filed a brief setting forth that:

1. Limiting the sale of "animal medicines" to graduates of veterinary colleges only violates Section 1 of the Sherman Act.
2. Coercion is not an essential element in the violation of the Act.
3. Offense consists of joint refusal to sell specified classes of potential buyers.
4. The Anti-Hog-Cholera Act does not confer immunity to the defendants.

Strangely, nothing in the brief explains why only the makers and distributors of anti-hog-cholera serum and hog-cholera virus were singled out, inasmuch as "veterinary medicines" comprise but a minor part of their business. Classified, Herrick's contentions are as follows:

- a) Unreasonably preventing swine raisers, poultrymen, farmers, and other animal owners from administering immunizing agents [called "medicines" in the indictment] to their own animals.
- b) Unreasonably restricting the channels through which animal medicines and supplies are distributed.

c) Unreasonably restricting and confining the individual liberty of trade of each of the defendant producers.

d) Unreasonably excluding persons from engaging in distribution of animal medicines and supplies.

e) Unreasonably suppressing competition among the defendant manufacturers and non-defendant wholesalers and dealers; and has had the effect thereby of restraining interstate commerce in animal medicine and supplies.

Numerous court decisions are cited in support of the government's contention. On the basis of this brief, setting forth the prosecutor's case against the serum producers, it was clearly not intended to include anyone in the vast pharmaceutical industry, which is the actual source of "animal medicines." Veterinarians will recall that throughout the development of this remarkable case, anti-hog-cholera serum and hog-cholera virus have been unfairly camouflaged under the name "animal medicines" for an obvious purpose.

In answer to the government's brief, the indicted producers of anti-hog-cholera serum and hog-cholera virus filed a reply of 70 pages entitled "Reply Brief for the Defendants in Support of Defendants' Demurrer and Motion to Quash."

The reply is a defense of the veterinary service against the harmful contentions of the government which clearly aim to install a substitute for the scientific veterinary service which has made the United States what it is today, a country free of serious farm-animal diseases.

There is no intention on the part of veterinarians to try this case for the Court. It is, however, clear to the councils of the veterinary profession that it would be a deadly omission to remain silent on this issue—the issue of sound or unsound protection of the people's food supply.

As previously stated in these columns, it will be interesting to listen to witnesses, competent to speak on this fundamental, who will be brought into court to propose any interference with the vigilance in animal-disease control in this, the greatest source of food the world has ever developed. To remain silent on such an issue now would be neglect of duty of the worst type.



## "What and Who is an Epidemiologist?"

(Continued, mayhap, concluded.)

Referring to my editorial on page 287 of the October, 1942, issue, "What and Who is an Epidemiologist?", I threatened to inform the members of the Association if the matter was finally closed. The article just referred to should have included the last four paragraphs as a part of the quotation from Dr. Joseph C. Willett.

The November, 1942, issue of the *American Journal of Public Health* closes the discussion. Harold F. Gray, a sanitary engineer of Berkeley, Calif., acknowledges that the discussion has been either amusing or distressing and makes some pertinent comments. He criticizes the definition given by Dr. Adams limiting the epidemiologist to a physician (M. D.) who investigates, or a medical inspector. He says this definition is far too narrow, calling attention to the fact that Louis Pasteur was not a physician, but he was an epidemiologist at heart. He also calls attention to nurses, bacteriologists, veterinarians, engineers, and entomologists who have upon occasion done excellent epidemiological work. Engineer Gray thinks that the definitions by Dr. Allen W. Freeman and Professor C. E. A. Winslow are the best. It is interesting to note that Winslow is not an M. D. So, the prolonged discussion leaves us very much where we started. We do not know exactly what an epidemiologist is but we know one when we see one. As Gray says, "By their fruits ye shall know them." (Matthew vii:16.)

s/Ward Giltner

## Russian Science Not Strafed

Russia is helping the United States and the whole world in other ways than war, says *Science* (Sept. 4). While German bombers were roaring over Moscow nightly, workers in the Academy of Biological Research of that city were doing work on the nature of growth identical to that under investigation at the Overly Research Foundation of New York. The "piracy of energy" by muscle cells depends upon a complex

phosphorus compound, the Moscow scientists state, and the presence of the compound may also explain why viruses are always parasitic, and therefore inert in the absence of living cells of plants or animals. That this chemical may be the link between nonliving and living matter—between virus and host cell—appears to be the gist of this report.

## Arithmetic Versus Biology in Food Production

American farmers are urged to produce more food by plowing more acres and raising more livestock—just like that—as if the production of living things yields obediently to the measures governing the output of the factory where all there is to do is to gear up the wheels or lengthen the line.

Nowhere in the avalanche of words going out to goad farmers along does the application of sanitary science enter the recommendations. Diseases of plants and animals, arch-enemies of food production, are set aside with shocking stupidity. If the charge is rude, it is none the less timely. It would not be very patriotic for veterinarians and entomologists to stand by and watch stupidity gnawing at and sweeping away the country's main hope of survival. England, after years of flouting, geared up its agriculture and veterinary service when it was too late and judging from the flouting livestock sanitary science is getting in this country, we are traveling in the same direction. Curative, not preventive veterinary medicine, is the time-ragged custom. Few ever hear of veterinary science until a major plague comes along, and nothing could more clearly prove that fact than the absolute indifference to animal diseases in planning the program for increased food production. Mathematical, not biological science, is the planner's god.

The great danger lies in throwing animal production out of balance by stepping up production without studious attention to the error of overcrowding the stables, the chicken coops, the feedlots, the pastures

and the ranges, not to mention the danger of production being reduced below the normal level through the inevitable ravish of disease. The crowded chicken coop is but one example of inviting disease to come in and upset the planner's calculation in a jiffy. Dr. Butler of Montana emphasizes the danger of over-stocking the ranges and Petterson (*American Cattle Producer*, May, 1942) points out that the gains in cattle production of the Southwest in recent years may be lost through the patriotic zeal to produce more livestock than the ranges can nourish. It is, however, in the small farm areas of the Middlewest and East that intensified livestock sanitation is most needed. It is here that crowding of shelter and ground is more likely to take a heavy toll through disease, and it is here that quackery is most widely practiced. Crowding livestock and poultry and expanding the home-treatment idea advocated by leaders in agriculture may have repercussions the American people never dreamed of.

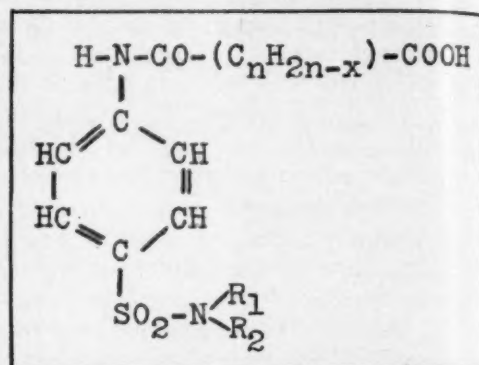
### A New Sulfa Drug: Succinylsulfathiazole

Having found that sulfanilylguanidine has limited application in the surgical treatment of gastrointestinal diseases because the drug, too readily absorbed in the digestive tract, gives rise to unfavorable reactions, the authors set out to find a sulfa compound devoid of objectionable effects; that is, one that is not absorbed in sufficient quantity to cause toxic manifestations and yet is effective against ulcerous lesions. Substances were found which meet the requirement. The general formula of the series is given as follows:

It was soon determined that products not readily split up by mineral acids did not possess toxic properties, and yet they had bacteriostatic action against coliform bacteria as determined by fecal examinations. Some of these were found to be active in the presence of ulcerations of the intestinal mucous membrane. Eighteen drugs in all, tried on dogs, showed that succinylsulfathiazole is a useful therapeutic agent.

Experiments on dogs, and its use in man

showed that the drug can be maintained at high concentration levels in the diseased



x May vary from 0 to 2n.

gastrointestinal tract of man (with low concentration in the blood) without the development of toxic reactions. After adequate treatment, there were profound changes in the character of the feces and their flora in 95 per cent of the patients treated. [From these observations it would appear that 0.25 Gm. per kilogram of body weight for six doses every four hours is the effective dose for animals. Poth, Edgar J., and Knotts, Louis F.: "The Clinical Use of Succinylsulfathiazole," *Archives of Surgery*, xlv (Feb. 1942), pp. 187-208 and *ibid.* pp. 208-222.]

Now we know why France fell. She can't even agree on which one of her children shall lead them out of oblivion. The *fraternité* of her banner was just another word, it seems just now.

American farmers use up 1,250,000,000 yards of burlap annually in the form of sacks. Burlap is made from jute and jute comes from India.

The greatest plank in the grand strategy of World War II is the making of friendly neighbors—Canada to the north and Mexico to the south. German armies sailing down the St. Lawrence or the Japs mobilizing in Mexico wouldn't be pleasant to anticipate, nor easy to circumvent.

## Use of Generic Names as Common Nouns

The Journal is not going to be drawn into endless arguments about the growing use of generic names as common nouns, for in language as in every other branch of knowledge, art or industry, he who puts himself across the path of a trend is only trying to stop a steam roller with a push of the open hand. We have already agreed to the use of *ameba* and its plural *amebas*, *ascarid* and its plural *ascarids*, *strongyle* and *strongyles* and other strictly proper collective nouns as common nouns (see, November issue, p. 399) but we just have to go on objecting to latinized plurals for Greek words, as for example, *cysticerci* for *Cysticercus* and many other futile attempts to pluralize such words, with what the writer believes is the right plural. In the plant world there are many examples of usage having made common nouns of proper ones (*geranium*, *acacia*, *rudbeckia*, *rose*, *rhododendron*, etc.), but in scientific medical writing, authors will do well to wait for the custom of the next generation before getting too reckless. While custom may rule in the end, one must wait for the end, in order to avoid the justified criticisms of the hour. One thinks of 1942, not 1972.

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During the first eight months of World War II, the American casualties in killed and wounded were but 10 per cent as many as the number killed and injured on the highways during the same period. What's the answer?

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The death rate in the United States declined from 17.2 per thousand in 1900 to 10.5 per thousand in 1941 and is still declining, the Bureau of Census announces.

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While hunger stalks among millions in many parts of the world the 191 million head of livestock on American farms is an outstanding paradox which the veterinary profession hopes no one will molest.

## Maj. Gen. Edmund B. Gregory Q.M.C., U. S. A.



—Photo by the Quartermaster Corps.

To whom in 1942 went the credit of establishing a dog service in the Army of the United States.

## Demand for Purebred Dogs Increases

Opposite to the fear that the war would be harmful to the dog breeding industry and to that branch of the veterinary service devoted thereto, the demand for good dogs has actually increased according to such authorities as the *Kennel Gazette*. The increased interest in "man's best friend" is attributed to the need of dogs as companions in homes bereft of men-folk who have joined the armed forces. Moreover, dogs are needed in homes to replace the ones donated to Dogs For Defense, Inc., which are destined for the war-dog service. Dog magazines are reporting that 125,000 dogs will be needed by the Army.

According to a recent army order, soldiers of the Remount Division of the Quartermaster Corps, not professional trainers, will handle the war dogs.

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In 1940, American farmers produced 5 million pounds of tung oil. The country's need is over 100 million pounds.



## The Source of Human Existence

Since the inner councils of the American Veterinary Medical Association set out, just a few years ago, to tell the story of the part played by the veterinary service in aggrandizing the United States to the status of a world power, a better understanding of man's debt to domestic animals has been brought about among, at least, the more thoughtful members of the general population. But, that all man has is the gift of the thin layer of soil covering the earth's surface and the animals it can feed is still far from popular comprehension. The doctrine of veterinary medicine in this respect is in the agenda of unfinished business. Our teachings must, therefore, go on until every school ma'am, every school boy and girl, their parents and keepers, will stop to visualize the fate of mankind, struggling for survival, with a declining domestic animal population.

It was gratifying to read the *Thirty-Fifth Annual Report of the Livestock Sanitary Board of North Dakota*. To quote:—

More of our people should have realized long ago that all life exists from a thin layer of soil, and agriculture must make it evident to all that what we are and have rests upon a wisely directed animal industry. Veterinary science has made enormous progress in recent years and we (= the people) will go upward or downward according to the wisdom we use in preventing losses in our state's major industry.

This work (= veterinary service) is beginning to be appreciated by stockmen and farmers, and *only statesmen overlook the bigness of it and express their oversight in meager appropriations for carrying out the work.* [Emphasis ours]. This would seem to be public opinion in action, but in North Dakota this is not the case, if we are to judge by the amount of public requests for our services.

In these days of international strife, bloodshed, and destruction, man's hope of remaining on earth, whether happy and secure or not, lies more in furnishing human necessities than in combating human diseases. Even these underlying facts are forgotten by the masses. Wise economists know that all wealth, comfort and pleasure are gifts of the domestic animal population. . . . However, the small amount of

money appropriated for their (= veterinarians') endeavor and the poor moral support received, are not at all comparable to the debt owed to that branch of human effort. Their splendid service, day and night, in behalf of our state economics are unknown and of no apparent interest to anyone. . . . For the specific details regarding this work, we will ask that you read the reports of the executive officer or the Livestock Sanitary Board.

Here, in a few well-chosen words, is the text for the veterinarian's sermon, for, until the general population incorporates these basic facts into the educational system along with the story of wars and political issues, the veterinary service will go on having an uphill pull. The genus *Homo*, living supposedly from intelligence (whatever that is) rather than from the instincts of lower creatures, which make his life precarious on more than two-thirds of the earth's surface, is, obviously, the dumbest of the mundane phyla. The proof is the meager effort made to develop and maintain a classical veterinary service, and failing to prevent the practices which open the way for lower life to take possession of the earth. If veterinary medicine isn't precisely that important, our pages are wide open for contrary opinions.

The fact that diseases of the gregarious animals, which are required to sustain the multiplying human population of this period, haven't excited as much interest as the fourth dimension, is not to the credit of the human being.

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There are 9 university students per 1,000 population in the United States. The percentage for Germany is 1 per 1,000 and for Italy, 2 per 1,000.

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The production of cheese in the United States for 1941 increased 60.3 per cent over the average for the 1930 decade. The amount produced in 1941 is estimated to be 723,550,000 lb., an increase of 20.3 per cent over 1940. Egg production for 1941 mounted to 40 billion (eggs), or 5 per cent over 1940. Striking ship builders please copy.

## North Carolina Leads in Bovine Brucellosis Control\*

That brucellosis is a threat to the nation's dairy and cattle industry is the theme of a release by Louis H. Wilson of the North Carolina Department of Agriculture announcing that state as the first one to have reduced the incidence of the disease to the "accredited" level (0.5%). Credit for the achievement goes to Commissioner of Agriculture W. Kerr Scott, State Veterinarian Wm. Moore, and BAI Veterinarian-in-Charge A. A. Husman, the trio under whom the eradication work was conducted. "With the virtual elimination of Bang's disease," says Commissioner Scott, "the food-for-victory phase [of the war] takes on new significance, not only for the millions saved for the farmers but also as a substantial contribution to public health." Chief J. R. Mohler of the United States Bureau of Animal Industry terms the work done in North Carolina "a great accomplishment," and adds in a letter to Commissioner Scott: "By suppressing bovine tuberculosis and brucellosis, the people of your state have contributed greatly to the food resources of this country and the growing public confidence that diseases of domestic animals can be conquered by energetic cooperative action."

Veterinarians accomplished the task by testing 601,149 cattle in 249,084 herds and drawing 1,240,668 blood samples for the laboratory tests. State-federal indemnities amounting to \$523,381.24 were paid to the owners of the 20,402 cattle slaughtered. In addition a large number of accreditation certificates were awarded to owners of purebred herds scattered among the 100 counties of the state.

Thus, North Carolina not only becomes the first of the 48 states to master two major diseases—tuberculosis and brucellosis—affecting both cattle and human beings, but also goes down in veterinary history as the proving ground of a disease-eradicating program that was pronounced (by some) as quite audacious in 1934.

\*Comments on a press release (for June 1942) from the N. C. State Department of Agriculture.

## Vegetables Implements of War

A recent dispatch to the *New York Times* from its London correspondent reports that the fate of the United Nations will depend, to a large extent, upon the 1942 harvest in Great Britain. Meat imports are dwindling on account of shortage of merchant tonnage and the sequel is a population depending more and more upon home grown vegetables, a source of sustenance hindered considerably by shortage of man power. School children, 25,000 women, and Italian prisoners are drawn upon to step up the production of vegetables. Nearly all arable land is already under cultivation and the area now tilled has been increased to 6,000,000 acres more than before the war. Meats, already scarce, will probably be cut further and fuel and light is expected to be rationed.—*Excerpt from Science, March 27, 1942, pp. 319.*

*Our Home*, classic among the pictorial magazines, runs a column entitled "Vegetables for Victory", reminding Americans that growing vegetables on the garden plot is "timely and patriotic."

## Some Livestock Figures

The Department of Agriculture has asked farmers to produce 83,000,000 head of hogs in 1942, which will represent a total slaughter of federally inspected hogs amounting to 54,300,000 during the current year, compared with the record year of 1923 when 53,334,000 were slaughtered under the supervision of the federal veterinary service. For 1923, it was estimated that the total hog slaughter (federally inspected and home killed) was 77,508,000.

The calf and cattle slaughter for 1942 has been set at 28,000,000 head. The corn acreage has been increased to 95,000,000 which is less than the acreage before the programs of the AAA. No marketing quota will be imposed this fall, and in addition government-owned wheat will be released for feeding livestock.

Prices of hogs, milk and milk products, eggs and poultry will be supported at 85 per cent of parity.—*Excerpt from American Cattle Producer.*

## Warbles and Leather

Whereas, the ox warble is a first rate nuisance in cattle breeding and a costly poacher on leather production, it belongs in the catalogue of things to fight in the war-time campaign waged by veterinarians against the enemies of domestic animals. The thing to be fought is the heel fly—*Hypoderma lineatum* or its first cousin, *H. bovis*—precursor of the warble, the familiar lump on the back of cattle where its grub stops for a sojourn on its journey through life.

The damage to hides caused by warbles is tremendous. In the spring of certain years favorable to heel-fly breeding, as many as 50 per cent of cattle arriving at markets for slaughter are infected in variable degrees with warbles and, therefore, many a hide is damaged. The loss per hide averages a dollar, totaling more than a million dollars a year according to conservative estimates, not computing loss of flesh from heavy infections and from the stampeding of pastoral herds. The heel fly also causes sizable losses in milk production through the annoyance of cows at pasture, and no one is yet able to say how much discomfort and ill health it produces by the presence of the larvae during their long journey through the whole of the year. A full year elapses from the time the eggs are laid on the hairs until the grubs emerge from the warbles and molt into adult flies ready to lay eggs to start a new cycle.

### HER MAJESTY, THE FLY

The heel fly is a small, sturdy, and rather famously inconspicuous insect with a wing expansion of  $\frac{3}{4}$  to 1 inch. The only reward for its long, difficult journey through the body of cattle is a life of but a couple of days spent in laying eggs. But the short existence as an insect is a busy one devoted exclusively to finding hosts and attaching eggs to hair. The heel fly does not feed. It lays its eggs and dies. Its life cycle is fantastic, and difficult to believe but for the scientifically established facts about its 12-month journey from the hairs of the heel

to the tough skin of the loin. There, the first sign of the infection appears in the form of a rounded lump the size of a half imbedded walnut, numerous in some instances and but few in others. The known habits of the heel fly are:

a) The fly lays eggs on hairs, generally about the heels.

b) The eggs hatch in 3 to 7 days.

c) The hatched egg (larva) burrows into the skin at or near the hair follicle, causing some irritation and annoyance to the host, indicated by licking and stamping the feet.

d) The larva migrates via unknown routes to the region of the esophagus, where it may be found mobilized in sizable colonies.

e) The colonies scatter to journey to the thick skin of the loin, also via paths difficult to demonstrate. Their presence in tenderloin, detectable in butchering, indicates that muscle tissue furnishes the route of travel. The rate of travel is slow. The larvae are hard to isolate because they have the color of flesh.

f) The warble, announcing the arrival of the larva at its last corporeal destination, appears in the late winter months in the region of the loin, where it sojourns for 50 to 60 days, after burrowing a breathing hole to the surface of the epidermis.

g) The larva escapes by squeezing its large body through a small hole, hour-glass fashion, and drops to the ground where it crawls to shelter beneath litter or soil for a sojourn of about 30 days, during which it molts from larva to pupa to fly.

Among the Metazoa, pathogenic for domestic animals, none has a more fantastic intrasomatic life history than the heel fly, which defied explanation for many years. For the known facts, the cattle industry and the veterinary profession are indebted mainly to Seymour Hadwin, distinguished Canadian animal pathologist.

### PREVENTION

The heel-fly problem is not insolvable, in view of the fact that its life cycle can be successfully interrupted at the warble stage where the grub is vulnerable to attack at the surface of the body. Painstaking squeezing out of the grub as it "ripens" for escape is perfect therapeutics, and if conducted as a community project, complete extermination is not impossible. More-



over, the extrasomatic life of the heel fly is not entirely rosy. Many are devoured by birds and other predators; dry, hot or cold weather hinder their growth; and many are killed by tramping in feedlots, or by being plowed under in cultivating. A certain amount of natural resistance is mentioned as a deterrent. But for these enemies, the heel fly would be a more formidable hazard in cattle breeding.

By far the most effective preventive is systematic eradication through community coöperation, the main hindrances to which are lack of effort on the part of cattle owners and the difficulty of that program in range cattle. Dairymen reduce the menace to some extent by the use of fly repellents, by keeping dairy cows stabled during the hot hours of the day when the flies are the most active, and by the use of sprays over the warble-affected region. Bishop, Laake, and Wells,<sup>1</sup> of the federal bureau of animal industry, however, report unfavorably on the use of repellents on the heels of cattle to prevent the laying of eggs, and also not too favorably as to their use as larvicides applied to the surface of the warbles.

Haseman and Roland<sup>2</sup> write favorably on the use of insecticide applications to the warble-affected backs. Derris in powder form, mixed with soap and water, or suspended in oil, and ointments are recommended to kill the incarcerated grubs, which, after drying up are squeezed out, manually. Since the grubs do not "ripen" at the same time, three treatments at intervals of a month are required. These treatments have the advantage of being less tedious than expressing grubs and they are harmless. Other drugs to be considered are turpentine, pyrethrum, nicotine sulfate, kerosene, gasoline and carbon tetrachloride. A convenient way to apply the liquid preparations is with a common oil can. These local treatments should be applied in January, February, and again in March.

<sup>1</sup>Bishop, F. C., Laake, E. W., and Wells, R. W.: Cattle Grubs or Heel Flies, with Suggestions for their Control. Farmers' Bulletin 1596, USDA, 1936.

<sup>2</sup>Haseman, Leonard, and Roland, W. S.: Control of Bot and Warble Flies of Livestock in Missouri. Bulletin 430, University of Missouri, College of Agriculture, July, 1941.

At once, the practical veterinarian will realize the difficulty of treating intractable herds in this manner, as compared with the docile cows of the dairy farm.

Love and Jones, veterinarian and entomologist respectively of the federal service (*The Cattleman*, Oct. 1942) set the annual losses at \$3,000,000 annually in depreciation in the market price of hides, adding that 40 per cent of hides carrying brands are damaged by brands, warble holes, warts, screwworms, lice, ringworms. Of these brand injury and warble holes cause most of the losses. These government experts declare that one packer set the loss in meat injured by grubs worms of warbles at 150,000 pounds a year. Multiplied by the losses of all packers in the country, the figures from the heel fly runs into fantastic figures inasmuch as the heel fly operates all the way from the Canadian border to the Gulf.

The treatment recommended by Love and Jones is either rotenone powder or "wetable" sulfur, applied as washes, sprays or powder, worked into the hair of the warble-infected backs. Either 5 per cent rotenone solution or 10 lb. sulfur per 100 gal. of water, sprayed, preferably under pressure, are the remedies of choice. A gallon is enough for each 16 head of cattle. The rotenone and sulfur solution may be mixed.

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A package of dehydrated bacon and eggs, the size of a loaf of bread, will make a meal for 100 soldiers. In shipping 27 million pounds of potatoes, shipping space amounting to two ocean-going ships is saved. So, says *Certified Milk*: "Keep your eye on dehydrated foods."

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"Group medicine" is advocated on the ground that classical medicine has become too costly for the proletarians who, in the interest of public health need it most, and it is opposed in the medical profession to guard medical science against commercial exploitation—against reducing the practice of medicine to the level of a common trade to the detriment of medical progress.

## The Women Veterinarians of England

We are happy to report that the women veterinarians of Great Britain, of whom there are quite a few, are rendering yeoman service to their country. Although at first, thought to be "surplus baggage" on account of the declining number of pet animals, a release from the British Information Service belies that impression. To quote:

London, October—(By Cable)—Women veterinary surgeons are playing a new important rôle in coping with Great Britain's food rationing program. In taking over work that was, before the war, almost entirely a man's occupation, they are helping farmers to maintain the purity of milk and to increase the production of meat.

Because of the food shortage caused by a lack of shipping space, Britons are forced to rely more and more on the domestic production of dairy and meat products. In an effort to save on their rationed foods, many people are raising, for the first time, such livestock as poultry, pigs, and rabbits, while farmers are busy increasing the size of their herds or adding new stock. And it is to serve this ever-growing class of people that a large number of feminine veterinaries are being called in.

### APPOINTED INSPECTORS

Just before the war began, there had been an increasing number of girls taking up this profession. The work of the qualified practitioners was, however, almost entirely limited to the care of common household pets. But a few weeks ago the Ministry of Agriculture marked a new phase in the history of women veterinarians by throwing open posts known as "temporary inspectorships."

These posts, available to men and women alike, include the responsibility of keeping a high standard in milk and other dairy products, and seeing to it that cattle and other livestock are healthy and of good quality.

But such investigation work is not the only job that these young women are doing. Some, who are particularly interested in the scientific angle, are serving overseas in the Colonial service in Africa, where they are doing laboratory research in tropical diseases among cattle. In England, too, research work is engrossing more and more women.

### ASSIGNED TO RESEARCH WORK

Notable among animal diseases which are being studied are rabbit ailments, which have

become the concern of vast numbers of the general public who are experiencing with the breeding of livestock. A certain woman veterinarian, for example, is at the moment entirely occupied with research in protozoology at the Ministry of Agriculture laboratories. Two others are coöperating in the laboratory, and one among the animals themselves, to try to track down a rabbit disease so obscure that as yet it has no name, and is called for the present "X" by these women who are bent on eliminating it.

### CARE FOR "BACKYARD" LIVESTOCK

In connection with the thousands of pig, poultry, and rabbit clubs which have developed as a result of the war, much of the veterinarians' work is advisory as well as medicinal. These women find themselves called in to help with the management and feeding of livestock from the very start of the clubs. Although most of the veterinary problems are due to dietetic errors, it is very difficult to guard against them. For backyard livestock in England must be fed on whatever scraps can be had, and most of it is very far from any recognized "balanced ration."

The problems confronting these feminine "vets" are multiple and varied. On one occasion, a pig club reported that one of the animals had fallen into a trough of hot swill and had burned its rump.

A hasty examination revealed that the pig actually was suffering from erysipelas, and treatment was given early enough to save all the club's stock.

Sometimes, there is a comic side to these calls for help. One woman veterinarian received an S.O.S. from a pig club in which she was interested. Would she come round at once? They were sure a sow had developed either swine fever or pneumonia; she was very distressed, and seemed in a serious condition. Hurrying to the scene, she discovered that some mischievous small boys were responsible for the sow's trouble. They had crawled into the sty and had chased the pig around until she was out of breath and agitated. There was nothing else the matter with her.

### TEACH CAPONIZING

Caponizing, little done by veterinarians until now, is also a wartime development. One woman, taught by a colleague, has herself instructed half a dozen others, and has caponized over a hundred birds belonging to local poultry keepers during the latter part of the season.

One or two women have built up considerable independent practices in agricultural dis-

tricts, where farmers have developed an increasing regard for their skill. Several are working as assistants on a voluntary panel scheme—a wartime innovation of the greatest importance to agriculture, by which farmers are able to have their herds regularly inspected and treated for disease.

#### VETERINARY SERVICE PRONOUNCED IMPORTANT

"Veterinary surgery is one of the most important professions in wartime England," the report declares, "from the point of view of disease prevention and cure among farm animals." This fact is well recognized by the authorities who have made it a fully reserved occupation. The status of women practitioners was marked recently by the formation of a women's section of the National Veterinary Medical Association, whose members are already, on their own initiative, widening their experience and knowledge in preparation for the demands they know will be made of them as war conditions tighten still farther.

#### Membership in the AVMA

Every study made of the veterinary situation leads to the same end—membership in the AVMA is a universal obligation of all veterinarians to their country, their profession and themselves. But, how to get that idea over to our small group of 12,000 is the crux. Drives for membership strike a vicious circle. While on the one hand it may be admitted that almost unanimous membership would enable the Association to acquire the tangible results wanted, nonmembers, on the other hand, have a right to plead that they are hampered by too low salaries or officially sanctioned quackery to work up much interest in anything except the family budget. In plain words, they can't afford to step in and help out. Those who do not possess fraternal spirit, professional pride, or ambition to learn, may be ignored but those of the low-income group have our profoundest sympathy. Theirs, however, is the un-

wise claim that inasmuch as they are not financially able to help themselves, they must stand aside and watch their profession remain at a lower level than that of other professions of equal educational status. Since higher salaries and better conditions of practice can be acquired only through the work of organizations like the AVMA and its constituent societies, it does seem reasonable to ask whether any veterinarian is too poor to support them by his membership.

The inspiration for this squib came from the low salaries paid to the veterinarians employed by the health department of a large American city. Interviewed as to why they did not participate with the local, state nor national organization their spokesman pointed to their low salaries as the cause, obviously unaware that in such societies rests their only hope of having them increased.

The veterinary corps of the U. S. Army is an excellent example of the power of sustained, united effort. Although their numbers were few and their status in the army unsatisfactory as to both pay and social rating, they fought their way to the high level they now occupy solely by helping the AVMA to help them. The same door is open to the BAI and to other groups marooned in the low-income class of technicians. It is galling to read advertisements of the Civil Service Commission for applicants offered initial salaries ranging from \$3,500 to \$6,000 a year, while veterinarians who got their diplomas from the same dais are starting in government work for half that pay. The vicious circle cited above can only be broken by sacrifices made by the veterinarians themselves—sacrifices amounting to the small fees charged by the associations. The younger element shows the right spirit by joining the societies of their peers as they leave the college door, but it's asking a lot to have them shoulder burdens that many of the older groups never picked up and leave others to bear.



## Erskine Caldwell

I watched the Russian people generate an all-out offensive against the German Army during the first six months of war in the Soviet Union.

While the Red Army was meeting the full force of Hitler's military power at the front, the people of the country considered themselves equally responsible for the safety of their homeland. Factory workers and farm laborers gave up their eight-hour day and spent ten and twelve hours at their jobs. Clerks, secretaries, doctors, teachers, and children placed themselves at the disposal of the State on Sundays and performed whatever tasks were allotted to them.

Citizens with such possessions as automobiles, radios, and bicycles offered them to the Red Army for military use. Those who possessed precious stones, gold, and silver turned them over to the State as contributions to help meet the cost of War.

In addition to all that, the people bought government Bonds as fast as the State printing presses could turn them out. I knew one Russian, a resident of Moscow, who had a large collection of American money which he had succeeded in gathering over a long period of time as a hobby. One of his first acts when war began was to invest it in Soviet government bonds.

Russians have a high regard for Americans. Next to themselves, they consider Americans to be the smartest, the most productive, and the most admirable people on earth. I was asked many times while I was in the USSR if Americans supported their government as wholeheartedly as the Russians did theirs by buying War Bonds. I always replied that when the time came Americans would dig as deep into their pockets as any people on earth. Invariably, the Russians nodded knowingly, as if to say they knew that all the time.

(Erskine Caldwell, the novelist, has recently returned from Russia, where he saw the Russian people at war. The following article was contributed to the War Savings Program.)

I have been back in the United States for several months, most of my time being spent in traveling across the country, and I often unconsciously compared Americans-at-war with Russians-at-war. Americans, I have concluded, could easily buy a lot more War Bonds and Stamps than they are buying, because they have far more to buy them with than the Russians have. In this respect, I believe the Russians are outstripping us and the only way we can keep up with them is to buy more Stamps and Bonds and to buy them oftener.

The Russians believe their government bonds to be the safest investment on earth, and they do not hesitate to back up their belief by buying all they can. Americans feel that our government bonds are likewise the best investment in the world, but many of us fail to take advantage of our opportunities merely because we put off doing from day to day what is not a hardship at all, but a rare privilege.

We do not realize what a privilege it really is. There are millions of persons in the Axis-occupied countries of Europe and Asia who would give anything to be able to invest their money in United States War Savings Bonds, rather than see their wealth being taken away from them by Germany and Japan.

And Americans, like the Russians, are well aware by this time that the only way to defeat Germany and Japan is to overwhelm them with planes, tanks, and ships. Buying War Bonds and Stamps will provide these vital necessities for America's armed forces in the same way that government Bonds provided them for the Soviet Union. Everybody in the United States has the opportunity of contributing to the defeat of our enemies in the same conclusive manner in which the people of Russia rose up and hurled back the German Army at the gates of Moscow.

If the Russians can do those things, Americans can, too.

Shortage of fats, oils and sugar may be acute next year when the present stock runs out. Increased production of soybeans, peanuts, cottonseed, linseed and lard and increased imports from South America is the proposed remedy. All of these concern animal production.

Charging that religion is impotent in keeping the world in order, Albert Jay Nock (*Scribner's Commentator*) fires this one: "It (the Church) knows its function, which is that of the good wife to the State. Like the good wife it never advises and never criticizes and when there is a row it always stands up for its husband."

The 13th annual convention of the Karakul sheep breeders held in Chicago December 3 and 4, 1941, was attended by delegates from New York to California. One of the exhibits shown was that of the USDA, Beltsville, Md. The secretary's report gave the number of Karakul registered by the association as 2,499; transfers, 1,091, and new members, 39.

The Canadian and American prisoners of war in Japan is a weird reminder of the late Floyd Gibbons, brilliant war correspondent of World War I and subsequent conflicts, who predicted (in 1933) that e're long the white man will be "carrying water" for other races of men. Well, quite a few thousand are doing just that now which is just nine years after the prediction was made.

Dr. William Straus, Jr., Johns Hopkins Medical School (*Science News Letter*, Dec. 20, 1941) is convinced that early man did not get about swinging through the trees, arm over arm, and he points out anatomic reasons as proof. The evolutionary chain was probably rattlesnake, scorpion, viper, wolf and dragon judging from man's conduct in 1942. Monkey shines are too remote to prove anything, now.

Radio commentators, newspaper reporters, farm bureau managers, cooks, waiters, barbers and candlestick makers seem to know just how this war should be run. The generals and admirals are not so cocksure.

The tank, the tractor, the airplane have increased its (war) complications. They have not displaced the horse any more than they have displaced the foot soldier. They have simply been added to the established requirements—*From the Cattleman*.

"Food will win the war," is an axiom of ex-President Herbert Hoover; to this, Secretary of Agriculture Wickard added "And write the peace." But, says a radio commentator, "We have a great harvest but too few harvesters."

Any one in a key position during World War I will compliment the government for establishing the Procurement and Assignment Service in its nation-wide program of classifying professionals as to their physical fitness and special qualifications. Every physician, dentist and veterinarian is going to get a button for the coat lapel to indicate that he has offered his service to the government in the capacity he is best qualified to fill. In time, the lapelless professional will be an unmarked *hombre*.

### Introducing:

Lysine, valine, tryptophan, methionine, histidine, phenylalanine, leucine, isoleucine, threonine, arginine. "These are words," said W. C. Russell at the New York-New Jersey meeting in New York City, July 8, "which may not mean much to you now, but I predict that you will find reference to them very frequently in the literature of the future."

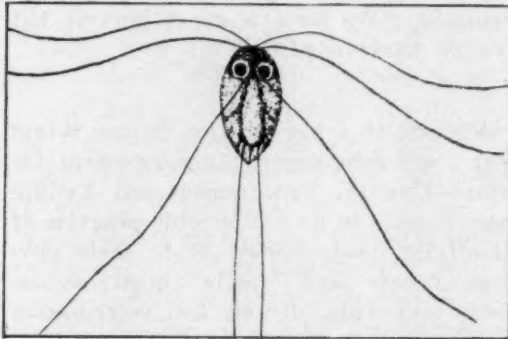
Needless to add that these are the names of 10 of the 20 amino acids constituting the proteins of food and feed which, even more than the vitamins and minerals essential to health, will occupy the attention of the future student of nutrition.

# CURRENT LITERATURE

## ABSTRACTS

### Hexamitiasis in Turkeys

Hexamitiasis, also designated infectious catarrhal enteritis, and formerly known as *intestinal trichomoniasis* is caused by the protozoan parasite *Hexamita meleagridis*, a grotesque creature which under high power magnification presents the facial physiognomy of a horrible octopus. The organism lives in the intestinal contents of turkeys and other fowls, passes from the body with the droppings, and dies quickly unless picked up by another fowl host.



—After Hinshaw and McNeil, 1942

Fig. 1—*Hexamita meleagridis* (x 3,750), showing its long flagella and eye-like physiognomy. The organism flourishes in the intestinal contents of turkeys and is shed by the thousands with the droppings of affected poults. Survivors continue to pass the parasite through life.

In its vulnerability outside of the host lies the secret of its control.

Hexamitiasis is a menace of the first rank in turkey production. It attacks poults under 12 weeks old. Resistance increases with age. Clinical symptoms are seldom seen above the age of 8 weeks except where resistance is lowered by external influences (feeding, environment).

The symptoms are lassitude, ruffled plumage, subnormal temperature, foamy diarrhea, chirping, rapid loss of weight, nervousness.

The autopsy reveals dryness of the skin, congested flesh, watery ingesta, poor condition. The mortality varies from 10 to 75 per cent. The diagnosis is confirmed by the presence of the organism in large numbers in the upper two-thirds of the intestine of fresh specimens.

**Prevention.**—Since survivors shed causal organism through life, they are the main factors in transmission. Attendants, dogs, cats, rats, feed sacks, and feeding equipment are the mechanical carriers to be controlled. When the disease appears on a turkey ranch, it is brought in by such carriers. The notion that *Hexamita* exists on all turkey ranches is not true, nor is it true that turkeys cannot be kept free from the organism.

Having shown in laboratory experiments that the organism must be consumed in large numbers to produce the disease, cutting down the intake by sanitary measures aids in preventing losses: warm brooders, cleanliness, wire sun porches, and isolating the sick. The over-feeding of milk and milk products for coccidiosis will prove disastrous. No drug of value has been found among the patent medicines and home-made concoctions tried. These include some of the common dyes, phenothiazine, mercuric chloride, and sulfaguanidine.

Prophylaxis rests with preventing parasites passed in the dropping being transmitted to susceptible poults. [Hinshaw, W. R., and McNeil, E.: *Turkey World*, xvii (May, 1942), pp. 16-17 and 50, 52, 53.]

### Vaccine for Tularemia

An attack of tularemia (human) confers lifelong immunity. The mortality is low, but the recovered patient effectively resists the most massive subsequent exposure. One of the authors has reported apparent immunity from vaccination. Although the disease is seldom mortal, the high infection rate among butchers, hunters and housewives, who dress rabbits, and the prolonged morbidity and disability produced, indicate the desirability of better methods of prevention. Ramon's method of chemically removing toxicity of bacteria, without impairment of antigenicity, led the authors to follow the same specification in tularemia. Methods of preparing such vaccine (toxoid), the study of its effects in vaccinated groups, testing applicants for the treatment serologically, and the administration of the vaccine are described. The work showed that in 2,145 persons, a useful degree of protection was conferred by annual vaccination. An advantage is the lack of severe reaction and the ease of



administration, together with the small-scale producibility of the vaccine. Persons not entirely protected contracted the disease in milder form. [Foshay, I., M.D., Hesselbrook, Wittenberg, H. J., M.D., and Rodenberg, A. H.: *Vaccine Prophylaxis against Tularemia in Man*, *Am. Jour. of Pub. Health*, xxxii (Oct. 1942), pp. 1131-1145.]

### Erysipeloid

*Swine Erysipelas Infection in Man* by L. Van Es, is the title of Research Bulletin 130, University of Nebraska, Agricultural Experiment Station. Its contents comprise Infection Sources, Mode of Infection, Epidemiology, Clinical Manifestations, Pathological Anatomy, Diagnosis, Prognosis, Therapy, and Prophylaxis, together with a bibliography of 105 references, and five graphic illustrations (one a color plate). The bulletin is a compilation of the known facts about the human type of swine erysipelas since the disease was first identified as a specific entity in 1884. The disease is classified as a wound infection due specifically to *Erysipelothrix rhusiopathiae*—the swine erysipelas bacillus—saprophyte of soil and decomposing nitrogenous material. In Nebraska, most of the outbreaks in swine are soil borne. Its presence in meat, game, poultry, fish, etc., accounts for the class of persons affected, other than the handlers of animals and earth-spoiled vegetables. The possibility of alimentary infection is pointed out. In 1938, 27 veterinarians and 29 other persons were accidentally inoculated in Nebraska. In a period of 25 years, 1,113 cases analyzed at the University of Berlin were mainly among urban populations. Of 96 cases studied by Rahm (1919), 63 were in veterinarians, and out of 100 cases reported by Klauder (1926), 58 were exposed in abattoirs.

As a rule, the disease declares itself as an erythematous dermatitis at the site of infection 24 hours after inoculation. In others, the incubation period is 1 to 4 days. There is heat, prickling and burning, and pruritus of the swollen zone extending from the portal of entrance. The metacarpo-phalangeal and wrist levels appear to barricade the spread of the infection. There is no pyogenesis. Pus formation would be due to pus formers. Most of the cases run a course of two to four weeks. Articular and periarticular complications (systemic infection) are described, but their association with the original infection is sometimes confusing. Gunther records two fatal cases in veterinarians, one of them dying more than three months after acquiring the infection. The author reports various atypical cases of confirmed, erysipeloid fatal cases of lasting duration, one illustrating the presence of mitral vegetations, endocarditis, cardiac hypertrophy

and hydrothorax, and enlargement of the spleen.

Evidence shows that veterinarians engaged in live-culture vaccination and postmortem work, and their helpers, are especially exposed. In view of the ever available anamnesis, diagnosis should not be difficult. But when the focus is located in parts other than the hands and history offers no clue, erysipeloid must be differentiated from erysipelas. The rapid spread of the latter and the systemic disorder (high temperature, rigors, albuminuria) reveal its nature.

Although, generally considered to be a benign disease, prognosis should be ventured with caution (Callomon), in cases presenting a more or less alarming aspect.

Among the treatments related are rest, immobilization, dry and moist heat, ultraviolet radiation, x-ray, Bier's hyperemia treatment, carbon dioxide snow, ichthyol, aluminum acetate solution, Burow's solution, phenol, alcohol, acetate of lead and alum, tincture and foreign proteins. Favorable results were obtained from internal administration of sulfathiazole.

The occasional occurrence of serum shock has "apparently dampened any enthusiasm serum treatment has aroused" among physicians. Veterinarians, having observed the quick response from anti-swine-erysipelas do not hesitate to treat themselves with it or recommend its use to their medical attendants. All-in-all, anaphylactic shock tends to make the physician hesitate in using this type of treatment. Callomon cautions that it should not be praised. Klauder discontinued its use after having once recommended it. In short, the author's ramble through a maze of opinions seem to indicate that anti-serum treatment is not popular in the practice of medicine. (Van Es, L.: *Swine Erysipelas in Man*, Bulletin 130, College of Agriculture, University of Nebraska, Agricultural Experiment Station, 1942. 34 pages. Official document.)

### Artificial Insemination in Canada

There is a considerable demand for artificial insemination from cattle breeders and because veterinarians possess the knowledge required to collect and inseminate semen, their service is sought for this purpose. It would be advantageous for practitioners to undertake this work wherever possible. The first societies for this purpose were organized among the Jersey breeders of Ontario last year [1941]. Credit for extensive use of artificial insemination goes to the Russians who have practiced it on a large scale. From 19,970 cows thus impregnated in 1930, the number advanced to more than a million and a half in 1938. Fundamentally, the purpose is to improve livestock but it also removes the expense of keeping bulls

which often are nondescripts and which prevent breed and production improvement. Another advantage is the storage and shipping of semen to distant places. Owners of prime sires are able to sell semen at high prices and more cows per service can be bred. Disadvantages are that well-trained operators and proper equipment are required, and the sale of bulls is curtailed.

A bull ejaculates 4 to 5 cc. of semen containing millions of spermatozoa which, by the use of a diluent, may be divided among a number of cows if kept in a thermos bottle at 45 F. Sperms may remain viable for as long as 96 hours, but the sooner the insemination is done the better. A 20-inch pipette attached to an all-glass syringe with a rubber adapter is used to make the injection: dose about 1 cc. Cows should be inseminated toward the end of, or shortly after estrum which as a rule lasts from 12 to 36 hours. Cows have been successfully impregnated as late as 12 hours after the last sign of estral heat has disappeared. Extension bulletin 200, of the New Jersey Agricultural Experiment Station, Rutgers University, explains the details. [McIntosh, R. A.: *Artificial Insemination in Cows*, *Canadian Journal of Comparative Medicine and Veterinary Science*, vi (Aug. 1942), pp. 239-241.]

#### Biennial Report Nevada Department of Agriculture

For the two-year fiscal period ending June 30, 1942, the report of the State Department of Agriculture to Governor E. P. Carville reveals that the assessed value of farm animals was approximately \$6,000,000 in 1940 and 1941.

The total is allocated, in round numbers, as follows: cattle, \$5,000,000, horses and mules (all types), \$1,000,000. Swine and poultry combined were assessed at about \$60,000. Sheep are not included in the "Stock Inspection Fund" which is raised by a special tax of four mills per dollar. Of this fund, \$24,288.72 were expended for the veterinary inspection service.

The State is announced relatively free from epizootic diseases involving large areas or groups of animals, although hog cholera, equine encephalitis, anaplasmosis, anthrax, blackleg, and bacillary hemoglobinuria caused considerable losses. Scabies of cattle does not exist and rabies has not appeared for several years. Blackleg occurred only where owners neglected to immunize their young cattle. The prevention of equine encephalitis has become routine and severe losses from bacillary hemoglobinuria have been reduced by taking advantage of vaccination. An antiserum for the latter, available to veterinarians, is produced by the Department of Veterinary Science, University of Nevada. Some cases of infectious keratitis and

keratitis due to vitamin A deficiency were observed. Anaplasmosis may require increased attention in the near future. Tuberculosis is of little concern, and the approved plan of utilizing calfhood vaccination for bovine brucellosis was instituted. Renewed interest in dourine was aroused when outbreaks in Arizona and southern California were reported. The extensive campaign against dourine since first discovering the State in 1930 has resulted in virtual eradication.

The executive secretary of the Department of Agriculture is Dr. Edward Records, member of the Research Council of the AVMA. [State of Nevada Biennial. *Report of the Department of Agriculture, 1940-1942.*]

#### Meat Our Greatest Farm Weapon

In World War I, the battle was for wheat; in this war to date the cry is for fats and meat. Like tanks and planes, superior weapons in actual combat, animal products are the superior food weapons; cereals are secondary. The government has, therefore, plunged agriculture into livestock production on a larger than usual scale. The problem ahead is to prevent stockmen from facing the same sort of dislocation through which wheat farmers went following World War I, yet the current need of more fats and meat is outstanding and will be met, up to the very limit of available feed. From trying to keep farmers from producing all they can, they must now do the opposite and do it quickly. American agriculture in many ways is still a slumbering giant. Farmers are prone to carry on "as usual" rather than to make changes. Raising corn to feed hogs is not easy to change into buying wheat for that purpose, and the same applies to feeding cattle; moreover, public agencies are not prone to giving up payments for surplus crops instead of expanding production.

In the effort to meet the nation's needs, Congress propounds one idea, the USDA another, and the OPA comes in with still another view. The secretary of agriculture wants more animals, Congress wants price parity, and the House wants to lock the door of our feed supply to bring about higher prices of feedstuffs. To go back 30 years for basic price directives is economic folly, yet the struggle goes on with no end in sight. "The job is to get our vast supplies of feed fed." Establishing a set of prices for animals and animal products needed in the war effort; preventing feeds from becoming overvalued; feeding livestock at least 25 million bushels of wheat per month; and expanding hog production in the Cornbelt, comprise the summation of the author's treatment of this basic wartime problem. [Dr. W. T. Schults, *Department of Agricultural Economics*,

Iowa State College: "Meat is our Greatest Farm Weapon," *Country Gentleman*, cxii (Oct. 1942), pp. 7 and 40.]

### The Microbic Flora of Sulfonamide Drugs

Sulfonamide drugs used locally, if not sterilized in the processes of manufacture and packaging, were found to contain staphylococci, streptococci, diphtheroids and both anaërobic and aërobic spore-forming organisms. As a consequence, the Food and Drug Administration requested manufacturers to take steps to sterilize these drugs and to package them in such a way as to prevent contamination. Approximately 50 per cent of samples examined contained viable bacteria.

Since the action of sulfonamide drugs is bacteriostatic, they would have no effect upon the Clostridium genera (*tetani*, *oedematiens*, *fallax*, *septicum*, et. al.) when used in the treatment of deep wounds. It is remembered that in World War I, *Cl. tetani* was often present in wounds of soldiers showing no symptoms of tetanus, but that tetanus sometimes developed weeks or months after the wound had healed, or after the passive immunity of antitoxin had disappeared. Delayed tetanus is less likely to develop in men immunized with tetanus toxoid, but few civilians are thus protected.

Experiments on guinea pigs showed that sulfanilamide contaminated with tetanus spores did not prevent the development of tetanus; on the contrary it, being a tissue debilitant, favored the development of that sequel. All sulfanilamide dusting powders should be sterile. A case of tetanus following the local use of sulfapyridine is mentioned. [Welch, Henry, Ph.D., Slocum, Glenn C., and Herwick, Ph.D., M.D.: "Tetanus from Sulfonamide Dusting Powder," *J.A.M.A.*, cxx (Oct. 3, 1942), pp. 361-364.]

**Comment.**—The value of this report cannot be over-stressed in veterinary practice since it is well known that the control of pyogenic reactions in animals actually favors the growth of tetanus spores. The remedy is the use of tetanus toxoid in the treatment of all wounds capable of being the cause of tetanus.—Ed.

### Rabies Virus Recovered from the Brain (Human) of an Undiagnosed Case

Schaeffer and Leider (*Journal of Laboratory and Clinical Medicine*, July, 1942, p. 1262), recovered rabies virus from the brain of a man who died from an unknown cause. The identity of the virus was established by animal passage and the presence of Negri bodies in the inoculated animals. Following recovery of the virus, investigation revealed a history of dog bite.

The antemortem diagnosis was *psychoneurosis and acute anxiety*. Physicians are warned to look out for atypical cases of rabies where that disease is endemic. [*Abst. J.A.M.A.*, cxx (Oct. 3, 1942), p. 399.]

### Hog Cholera: Inclusion Bodies as an Aid in Diagnosis

In diagnosing hog cholera, clinical symptoms, history, autopsy findings and impractical leucocyte and lobular counts have been depended upon. Inoculations of susceptible animals are costly and time-consuming. More rapid diagnostic methods would be of "inestimable benefit," when resort to vaccination would be of questionable value. The presence of inclusion bodies in the conjunctiva, demonstrated more than 30 years ago, is not diagnostic because this intracellular phenomenon occurs also in healthy hogs. The finding of tissue specific inclusions in other virus infections suggests that a similar cellular reaction may exist in hog cholera. Since the mucosa of the gall bladder is affected in this disease, with distinguishable lesions, that tissue was selected for study. More than 600 gall-bladder specimens from cholera-affected hogs and 50 from healthy hogs brought to abattoirs for slaughter were examined by classical methods. In cholera-affected hogs the epithelial and glandular cells stained sharply, while the nonaffected cases failed to take the stain readily. The two were easily differentiated. Whether the inclusion bodies found were of the same nature as those present in other virus diseases is not known but they, nevertheless, suggest a possible aid in diagnosing cholera. [Boynton, W. H., D.V.M., Woods, Gladys M., M.A., Wood, F. W., D.V.M., and Castleberry, N. H., D.V.M.: "Cell Changes in the Gall Bladder as an Aid in the Diagnosis of Hog Cholera," *The Norden News*, Oct.-Nov. 1942, pp. 3 and 16.]

### Study of Fertility in Sheep

Seminal changes affecting fertility of rams is the subject of an excellent book published by the Council of Scientific Research, Commonwealth of Australia. The authors are R. M. C. Gunn, D.V.Sc., B. S. Agric., M.R.C.V.S., lecturer in anatomy, surgery and obstetrics, University of Sidney; R. N. Sanders, B.V.Sc., and W. Granger, B.V.Sc., technical research assistants subsidized by the Australian Wool Board.

The book consists of 150 photo-lithographic pages profusely illustrated with macro- and microphotography showing the technique employed and the results obtained. The study comprised the seasonal variations of ram semen, the effects of climatic temperatures,



warmth, cold, and diet on the motility, longevity, and morphology of spermatozoa, all of which is described by text material, pictures, tables, and well-drawn charts showing that a piece of painstaking work was carried out in spite of wartime obstacles. [*Bulletin 148. Government Printer, Melbourne, 1942.*]

### Artificial Insemination in the Treatment of Sterility (Human)

Artificial insemination is one of those rare practices which cannot be traced back to Hippocrates. In man, it is but 150 years old. Arabs practiced it in horses in the fourteenth century. Spallanzani impregnated an insect, an amphibian and finally a dog. The illustrious John Hunter successfully performed artificial insemination on a woman, and in 1866 J. Marion Sims reported a successful case in this country. In 1907, Physiologist Iwanoff of Russia wrote his distinguished monograph on the subject. Since then, thousands of animals have been artificially impregnated in that country. One bull has fertilized over 1,000 cows in one season; a ram has inseminated 15,000 ewes; and a half dozen colts were born from a service of a blooded stallion. By comparison, physicians to the human race are leagues behind the physicians to animals, where over 90 per cent of the attempts are successful. The human series reported have been less fruitful and involve but a few cases. In man, indication, technique, and moral and legal aspects have to be considered. The methods to be employed and the time of inseminating in its relation to menstrual data are discussed. Successful artificial insemination in man is a satisfying medical practice, in view of the sterile father doting on his two children which, according to the neighbors, resemble him closely. [*Guttenmacher, Alan F., M.D.: "The Role of Artificial Insemination in the Treatment of Sterility," J.A.M.A., exx (Oct. 10, 1942), pp. 442-445.*]

### Land, Industry and Agriculture (in Great Britain)

"There is a growing realization that the economic, social and cultural life of the nation is ultimately dependent upon the right use of the land." It was evident that during the interwar period, agriculture declined in this the most urbanized country in the world. But one-eighth of the agricultural area is developed farm land. A committee of the government has recommended that no more arable land be used for sites of war industries and has set out to revitalize rural life and improve rural amenities: housing, etc., as a sound agricultural policy must start with the house. The objective is to maintain a prosperous agriculture after

the war, which with the British mixed farming may be difficult. The espousal of nutrition and agriculture, improving conditions of farm labor, and treating farming as an industry or group of industries for the purpose of satisfying human wants with minimum toil, rather than as a way of life to be preserved without change, are among the committee's recommendations. On the Continent, attempts to produce cheap foodstuffs have lowered the standard of living for the farm worker. One effort should be to present a clear picture of the better world which lies ahead. It would be a fatal error to postpone the planning until the war is over. The greatest failure of both war and peace is the failure to think ahead and make plans in advance. [*The Veterinary Record, Iv (Oct. 3, 1942), p. 199.*]

### War Increases Interest in Milk Goats

Goats fill a place in American agriculture not held by any other class of livestock. The goat eats less, occupies less space than a cow and produce milk for 9 to 10 months of the year. These and other characteristics fit them for producing milk after the war. In places where more milk is needed, good goats would contribute to the welfare of many families. In 1939, there were 118,896 milk goats in 48 states reporting, not counting several hundred thousand unimproved, common goats. The important breeds are the Saanen, Toggenburg, Nubian and Alpine. Production of 3 pints of milk a day is considered only fair, 2 quarts good, and 3 quarts excellent. Goat's milk is used in many parts of the world, both from choice and necessity. Persons allergic to cow's milk show no reaction to goat's milk. Because its fat globules are small and curd soft, it digests easier than cow's milk. As a beverage, goat's milk is very satisfactory, as butter it is not commonly used. Although goats are highly resistant to tuberculosis, brucellosis (Malta fever) has been found in goats of the Southwest.

Does milking should be kept in sanitary quarters. The danger from brucellosis is prevented by pasteurization. Good breeding practices are recommended. In attempts to make does mate successfully, gonadotropic hormone, found in the blood serum of pregnant mares, was used with a certain measure of success at the Beltsville Research Center. Should the use of this gonad stimulant prove practical, the value of goats as a dependable source of milk for the family would be increased.

Goats are browsers. They prefer twigs, leaves, and weeds to grass. Several goats find sufficient nourishment on an acre of good pasture, during 5 to 6 months of the grazing sea-

son. They can be tethered out and require but 500 lb. of hay and 450 lb. of grain per year. Depending upon breed, goats bring from \$25 to \$100 a head, crossbreeds as low as \$15 to \$50.

Moreover, goat meat and goatskins add to the income of goat breeding. The United States imports 600,000,000 lb. of goat hides annually, costing from 25 to 50 cents each. [Simmons, V. L., *U. S. Bureau of Animal Industry: War Stimulates Interest in Milk Goats, the Goat World*, xxvii (Oct. 1942), pp. 3-5.]

### Phenothiazine Suspension Patented

The insolubility of phenothiazine in water, its somewhat unmanageable properties, and its refusal by certain animals when mixed in the feed, led to the use of the drug in a suspension during the past two years. The making of a suspension that will not clump nor solidify and which can be given with a dose syringe was accomplished by a special process for which a patent was granted to the Jensen-Salsbery Laboratories of Kansas City. The patent covers the treatment of phenothiazine in such a way as to produce a homogeneous fluid that can be administered to horses and cattle with a syringe, *per os*, or mixed with slop for swine.—*Jen-Sal Journal*, Oct.-Nov., 1942, p. 8.

## BOOK NOTICES

### Clinical Thermometers

This is the third edition of *Clinical Thermometers* published by the National Bureau of Standards, U. S. Department of Commerce, to promote fair competition among manufacturers and to assure the purchaser that the thermometer has been tested and found to meet the recognized standard regarding aging, pigment test, entrapped gas test, hard shakers, retreating index, and accuracy, all of which are described for both F. and C. thermometers. The project of testing thermometers and certifying to their fitness was started Nov. 18, 1927, through the solicitation of the Associated Thermometer Manufacturers, who requested the Bureau to establish a commercial standard for clinical thermometers. The standard agreed upon was affirmed March 4, 1930, but was revised on several occasions up to Jan. 20, 1942. The names of the societies and manufacturers who have accepted the specifications are listed. [*Clinical Thermometers, Third Edition*, Jesse H. Jones, U. S. Department of Commerce, and Lyman J. Briggs, director, National Bureau of Standards. U. S. Government Printing Office, Washington, D. C. 19 pages. 1942.]

### The Anti-Cruelty Society—Chicago

The Year Book of The Anti-Cruelty Society of Chicago, named *Progress*, reports that 10,842 animals of all sorts passed through its hands during the fiscal year. The service rendered to unfortunate animals included collecting, feeding, housing, handling, general care, seeking the rightful owner, finding new homes, and humane destruction of suffering and surplus animals.

Besides medical care for the sick, the surgery treated everything from common wounds and fractures to the more complex abdominal and parturient troubles. Continued consideration was given to euthanasia rather than permitting animals to suffer through long periods of illness. Life not being endless, it is often a kindness to interrupt it in humane fashion, *Progress* tells its readers.

*Leptospirosis* (Weil's disease) was found to be of more and more frequent occurrence in the Chicago area. The importance of this, in view of its transmissibility to man is pointed out. In dogs, especially pups, *digestive diseases* predominated, and owners are advised to insist upon a veterinarian's examination before purchasing a dog. Dealers who object should not be patronized.

*Rabies* was less common than in former years, although many cases of dog bites were treated. Keeping dogs in their own proper domicile, or on a leash when outdoors, is the preventive measure recommended.

*Pet rodents* whose incisors remain too long from lack of attrition—bears, monkeys, raccoons, white rats, turtles, wood-chucks, goats, horses, lovebirds, rabbits, chickens, ducks, owls, seagulls, crows, and cockatoos—were among the animals brought in for treatment.

"Please do not ask us to take away the practitioner's business, but please send us your charity cases," is the creed of the Society, which invites coöperation and consultation with licensed veterinarians who in addition are offered the advantages of the available equipment: x-ray, electric, dental and surgical facilities. [*Progress—Year Book of The Anti-Cruelty Society, Chicago, 157 West Grand Avenue. 18 pages. Booklet. 1942. Dr. W. A. Young, Managing Director.*]

### Report of the Veterinary Director General, Dominion of Canada

The report of Veterinary Director General A. E. Cameron for the fiscal year ending March 31, 1942, shows that Canada remains free from serious diseases of farm animals. There were no cases of dourine, anthrax, rabies, glanders, nor horse mange reported during the year, and the flare-up of hog cholera in the previous fiscal

year was brought under control. Minor outbreaks of bovine mange occurred in Nova Scotia and Ontario.

Wartime conditions disturbed the operations of the Health of Animals Division to some extent, mainly in regard to restricted products shipped to Canada. Outbreaks of foot-and-mouth disease in Ireland and Scotland resulted in stopping shipments from these countries.

The number of tuberculin tests made was 1,175,050. Of these, 764,327 were under the Restricted Herd Area plan, 273,901 under the Accredited Herd plan, and 136,732 under the Supervised Herd plan.

Calfhood vaccination against brucellosis, as an additional aid to the control of that disease, is under consideration. Meat inspection was hampered by packing plants working 24 hours a day and the shortage of inspectors.

Deaths, retirements, promotions, and new appointees are listed.

The report shows clearly that animal production has been stepped up in the Dominion. The increases over the previous years as shown by animals slaughtered, were 11.06 per cent for cattle, 9.65 per cent for sheep, 7.17 per cent for hogs, and 41.18 per cent for poultry.

Statistical reports of the Division's activity are contained in numerous tables giving the details of a vast public service, extending from ocean to ocean, which continues to make the Dominion of Canada an outstanding example of a country capable of mastering the diseases of its domestic animals. [*Report of the Veterinary Director General, 1942. Printer to the King's Most Excellent Majesty, Ottawa.*]

### Drug Products—Labeling, Packaging, Regulation

The need of regulating the drug trade to protect the public against shysters, swindlers, and quack doctors, who have tainted the legitimate contingent of the industry in all times, was recognized by Congress as early as 1848 when an act was passed to prevent the importation of unfit drugs. Between that early date and 1906 (58 years), nearly 200 measures introduced into Congress were systematically blocked by powerful interests engaged in the lucrative faking which the unregulated drug trade has always afforded. The fake doctors—patent medicine makers—were not alone in framing opposition to regulatory laws. The makers of adulterants, coloring material, and flavoring, joining with the flourishing nostrum producers who preyed on the sick to accumulate wealth, were able to parry reforms until 1906 when the intrepid Harvey W. Wiley, head of the Chemical Division of the United States Department of Agriculture, who, by carrying

the fight to the public through books and magazine articles, brought about the passage of "food and drug" laws, first by most of the states and finally by the federal government. The campaigns of Wiley at the turn of the century, originating as they did in the USDA and involving the health of farm animals, are written indelibly into veterinary history. They removed many a fake livestock remedy from the channels of trade.

This book, just off the press, contains the budget of needful information on the regulation of the drug trade which hitherto was obtainable only in scattered documents. It was written for the education of all concerned. Manufacturer, packager, advertiser, seller, dispenser, doctor, lawyer, consumer, and quack will be interested in this effort to answer all questions appertaining to traffic in the matériel of the realm called *drugs*. The author is a practicing attorney of the New York and federal bar familiar, through experience, with the operations of the Food and Drug Administration and Federal Trade Commission to whom the administration of the congressional acts pertaining to the drug trade has fallen.

The points of this book to signalize are its clear-cut language, its answers to some of our every-day problems as buyers, dispensers, prescribers, and users of drugs, and the ready reference it provides on the complexities of drug handling by professional men and by intruders into the field of ethical practices. Although the Food and Drug and Cosmetic Act of 1938 and its predecessors are primarily intended as public health measures, the statutes do not exempt veterinary products. On the contrary, certain of the prohibited drugs which can be legitimately dispensed only on the prescription of a physician, dentist or veterinarian must be marked "for veterinary use only," to prevent them being diverted to human use. In other words, the author emphasizes that "labeling should not only contain no recommendation for use by humans [man] but in addition must state affirmatively that the article is not for such use."

Of special importance to manufacturers, is the chapter on *New Drugs* covering Section 5a of the Act which, in effect, contains the warning to consult the Administration before putting any new drug or compound on the market, regardless of whether it may or may not be listed in the United States Pharmacopoeia or National Formulary. Moreover, the full text of the Federal Food, Drug and Cosmetic Act (as amended), plus the general regulations pertaining to drugs which the Act authorizes the Administration to frame, is a precious reference for any handler of drug to have within reach. The great value of the book to the legal profession is unquestionable. Of great value to the veterinarian is the list of com-



monly used galenicals which are apt to be substandard, and the methods recommended for the testing of antiseptics, which are given in detail for the guidance of manufacturers. There are three pages of court decisions touching upon the administration of the Act, 12 references to books and articles on antiseptics, among which is Ward Giltner's *Laboratory Manual in General Microbiology* (1926), a short bibliography of selected references, and a general index which enable the reader to turn promptly to information sought. [*Drug Products—Labeling, Packaging, Regulation*, by Arthur Donald Herrick. 450 pages. Cloth. Revere Publishing Company, New York. 1942. Price, \$7.50.]

### Fur for the Army and Navy

The "mill run" of farm animals is not all of the animals needed to clothe soldiers and sailors operating in all zones of the world. The fur-farming industry, generally appraised as luxury, forges to the front as another "agricultural" necessity deserving of attention and its share of government support. The fur breeders of the Northwest, Pacific Coast and Intermountain country have arranged a conference in Washington to furnish information as to the kind and quality of fur needed by the armed forces in Alaska, Arctic latitudes and the zero altitudes where the air men fly; to develop centralized and authentic information; insure continuity and adequacy of supplies; and to establish a system of standards of material approved by the quartermasters. To carry out these projects the Raw Fur Industry Advisory Committee was organized with leading figures of the industry as its members. By this means, the fur-farming industry hopes to come to the aid of the government in its war effort. [*Editorial: Furs for Military Use*, the *Fur Journal*, viii (Sept. 1942), pp. 3-5.]

### The Metabolism of the Fasting Steer

There is economic and academic importance to the metabolic phenomena of fasting in the ruminant. Wildlife (deer) deprived of food for long periods come out of the ordeal in good shape. Camels endure the hardships of long journeys without water, and because of their storage capacity, cattle can exist comfortably without food for several days, although in domestic life they are seldom forced to make use of nature's provision in that respect. The history of experimental fasting shows that animal life is protected against food shortage. Dogs endure long periods of fasting, and cold-blooded animals in captivity (snakes) fast for extraordinary lengths of time without injury. The degree of resist-

ance to food privation is, however, not the same in all animals.

Experiences with whole communities as a result of the war, indicate that while man enduring lack of food may suffer serious disturbances, complete recuperation takes place when food is again available. Studies have been made by the authors of men fasting from 8 to 31 days, geese for 30 days, and snakes which refused food for months. Young men experimentally exposed to undernutrition suffered physiological alterations without corresponding effect on physical and mental power. In sight of known facts, depriving cattle of food experimentally is not seriously objectionable.

Following an interesting introductory chapter, the authors revive the reports on fasting in animals written by Magendie (1852); Colin, distinguished physiologist of Alfort (1862 and 1888); Grouven (1864); Bishop and Volt (1853); Ignatiff, of Russia (1883); Capstick and Wood (1922), and others of more recent dates, whereupon their text uses up more than 200 pages describing methods and apparatus employed in depriving the domestic steer of food and measuring the results on the vital functions and body dimensions, all in the minute details required for finished scientific investigation.

The casual reader not concerned over the entire procedure carried out will find a liberal education on the subject in the 23 introductory pages and 5-page summation, together with the section on basal metabolism (20 pages) entitled *The Basal Metabolism of Steers*, in which that too little studied subject in veterinary medicine receives classical treatment. Although this book was first published in 1927, it is none the less valuable as a treatise on the subject indicated by the title and for refreshing the mind on the most vital of all physiological processes—metabolism. [*The Metabolism of the Fasting Steer* by Francis G. Benedict, director, Nutritional Laboratory, Carnegie Institution of Washington and Ernest G. Ritzman, research professor in animal nutrition, New Hampshire Agricultural Experiment Station. Carnegie Institution of Washington, Publication 877, 1927. Paper. 246 pages.]

The Royal College of Surgeons (London) was wrecked, practically beyond redemption, by a German bomb. A transfer of some of the priceless specimens of the museum was aided by a grant from the Rockefeller Foundation. Among these were the surgical instruments of Lister. — *From J.A.M.A.*

# THE NEWS

## AVMA

### Executive Board Elections in Progress

Elections of members of the Executive Board to represent districts Nos. I and IX for five year terms ending in 1947 are now taking place. Ballots were mailed on November 21, 1942 to members residing in the districts and the polls will close on January 21, 1943.

The nominating polls for both districts closed on November 11. The following names appear on the ballots for District I (Dominion of Canada):

Mark Barker, Ottawa, Ont.  
A. E. Cameron, Ottawa, Ont.  
Frank J. Cote, Guelph, Ont.  
R. A. McIntosh, Guelph, Ont.  
Charles A. Mitchell, Hull, Que.  
William Moynihan, Toronto, Ont.

A tie for fifth place necessitated placing six names on the ballot instead of the usual five.

The following are the nominees in District IX (New York State and all of New England):

W. A. Hagan, Ithaca, N. Y.  
H. W. Jakeman, Boston, Mass.  
Edwin Laitinen, West Hartford, Conn.  
Gerry B. Schnelle, Boston, Mass.  
C. P. Zepp, New York, N. Y.

Owing to the sudden and untimely death of Dr. W. L. Curtis (November JOURNAL, p. 421), Executive Board member from District VI, a nominating election is also in progress in that district to select candidates for the unexpired term ending in 1946. The polls for this election will close on December 23, 1942.

### Can You Help Locate These Lost Members?

The aid of JOURNAL readers is solicited in locating the following members, mail to whom has been returned to the Association's central office. The last known address of each is given. Should you be able to provide information as to present residence, your advice *via* postcard or letter will be greatly appreciated.

Bartley, Frank E., Westboro, Mo.  
Beauchamp, John W., Bellingham Hotel, Bellingham, Wash.  
Case, R. W., 1534 W. McDowell, Phoenix, Ariz.  
Castro, Fred, General Delivery, Omaha, Neb.  
Clymer, Elza E., 107½ W. Washington St., Napoleon, Ohio.

Collins, Wayne D., 4th E. A., Fort Bragg, N. Car.

Coons, B. W., Lisbon, N. Dak.

Cox, Wm. L., Box 2074, Raleigh, N. Car.

DeMott, Andre R., Utica St., DeRuyter, N. Y.

Finney, Lawrence, Georgetown, Ill.

Haynie, Fred B., 230 W. 1st, N. Richfield, Utah.

Helmboldt, Charles F., Box 59, Unionville, Mich.

Jackson, D. A., 135 S. 4th E., Preston, Idaho.

Keane, John J., Fort Adams, Rhode Island.

Lamkin, William E., Patroit, Ind.

McCamish, John N., c/o Skyland Grocery, Ruidoso, N. Mex.

Mathis, Rudy C., State Veterinarian, Atlanta, Ga.

Mesenbrink, R. L., General Delivery, Kirksville, Mo.

Moffat, Geo. Colvin, 5732 W. Cermak Rd., Cicero, Ill.

Olson, Phillip C., 914 W. Walnut St., Yakima, Wash.

Remsberg, Glen S., Chicago Q. M. C. Depot, 1819 W. Pershing Rd., Chicago, Ill.

Sadow, I. J., Ft. Benning, Ga.

Solnitz, Gerhard S., 122 Catherine St., Ithaca, N. Y.

Spears, C. J., Dublin, Ga.

Thompson, L. G., Swainsboro, Ga.

Valentine, Harold D., 3561 Walnut St., Philadelphia, Pa.

### Resident Secretaries to Be Nominated by Constituent Associations Beginning in 1943

Among other amendments to the constitution and administrative by-laws adopted at the 79th Annual Meeting was one designed to facilitate the selection of resident state, territorial, and provincial secretaries. It provides that each constituent association shall nominate one of its members for the position, such nominations to be submitted to the AVMA central office in time for appointment and announcement by the incoming president at the next annual meeting.

Letters were sent to constituent association secretaries on Sept. 29, 1942, advising of the new arrangement and requesting that the nomination of a resident secretary be placed on

the business program of their *next annual meeting*. This will enable the nominations to be collected in the AVMA office over the next several months so that they will be ready for announcement at the annual meeting in 1943.

The amended by-law could not be put into operation for the current (1942-43) association year. Consequently, President Dimock made appointments as announced in the October JOURNAL (pp. 301-302). Some association secretaries have misunderstood the requirement and their attention is especially directed to the fact that the nominations to be made are for the *next* association year and not for the current one.

## Newspaper Articles Complimentary

Nation-wide attention was paid to the Association's recommendation of proper feeding, cleanliness and general care as a means of increasing food production. The advice given in that connection, through a recent release from the central office, was seized for headlines and text material which proves that veterinarians have other plans for the livestock industry than making money from it. Noticeable in these articles are the compliments to the American veterinarians for their organized participation in the food-for-freedom program.

## APPLICATIONS

*The listing of applicants conforms to the requirements of the administrative by-laws—Article X, Section 2.*

### First Listing\*

ADAMS, W. A.

Glasco, Kansas.

D.V.M., Kansas City Veterinary College, 1918.  
Vouchers: R. F. Coffey and Ashe Lockhart.

BRENTON, WILLIS L.

922 Alexandrine Ave., W., Detroit, Mich.

V.S., Ontario Veterinary College, 1903.

Vouchers: E. K. Sales and John P. Hutton.

110 E. Jefferson St., New Carlisle, Ohio.

D.V.M., Cincinnati Veterinary College, 1916.

Vouchers: R. H. Aull and C. L. Sanders.

BRUSH, LORAN

CAMERON, GEORGE L.

417 Bloomfield Ave., Montclair, N. J.

B.V.Sc., Ontario Veterinary College, 1932.

Vouchers: J. B. Engle and H. R. McKinney.

COOK, JOHN W.

435 Gage Blvd., Topeka, Kansas.

D.V.S., St. Joseph Veterinary College, 1910.

Vouchers: Chas. W. Bower and A. Kushner.

CRAWFORD, C. B.

Horton, Kansas.

D.V.M., Kansas City Veterinary College, 1912.

Vouchers: F. B. Croll and Ashe Lockhart.

DROLESKEY, EDWARD A.

16 Church St., Springfield, Mass.

D.V.M., Texas A. & M. College, 1941.

Vouchers: A. A. Vogel and M. W. Cohen.

DUNGAN, WILLIAM M.

Forward Echelon, Hdqs. 9th Service Com-

mand, Presidio of San Francisco, Calif.

D.V.M., State College of Washington, 1939.

Vouchers: J. H. Hensley and B. J. Elander.

GEORGE, JOHN W.

State Veterinarian, State Dept. of Agri., Jefferson City, Mo.

D.V.S., Kansas City Veterinary College, 1910.

Vouchers: H. D. Rodabaugh and Ashe Lockhart.

HACKNEY, E. L.

504 W. Adams, Temple, Texas.

D.V.M., Chicago Veterinary College, 1918.

Vouchers: T. O. Booth and Ashe Lockhart.

HAYES, W. F.

Farmersville, Texas.

D.V.M., Kansas City Veterinary College, 1912.

Vouchers: T. O. Booth and Ashe Lockhart.

HUEBEN, FRANK H.

3421 Central St., Kansas City, Mo.

D.V.S., Kansas City Veterinary College, 1911.

Vouchers: Ashe Lockhart and G. L. Dunlap.

HUGHES, ERNIE C.

P. O. Box 627, Jefferson City, Mo.

D.V.M., Indiana Veterinary College, 1916.

Vouchers: Ashe Lockhart and G. L. Dunlap.

HYNES, W. S.

504 W. William St., Delaware, Ohio.

D.V.M., Ohio State University, 1938.

Vouchers: J. A. McOwen and M. E. Howell.

JOHNSON, GEORGE M.

High St., Exeter, N. H.

B.V.Sc., Ontario Veterinary College, 1937.

Vouchers: E. W. Simmons and F. F. Russell.

KORB, WILL W.

Hill City, Kansas.

D.V.M., Kansas City Veterinary College, 1916.

Vouchers: F. B. Croll and Ashe Lockhart.

LEGENHAUSEN, DALE H.

511 New Federal Bldg., Atlanta, Ga.

D.V.M., Iowa State College, 1940.

Vouchers: C. J. Spears and J. R. Houchins.



- LUCKEY, DAVID F.**  
3969 Palm St., St. Louis, Mo.  
V.S., Ontario Veterinary College, 1896.  
Vouchers: Ashe Lockhart and G. L. Dunlap.
- LOVETT, H. M.**  
Eureka, Kansas.  
D.V.M., Ohio State University, 1922.  
Vouchers: F. B. Cröll and Ashe Lockhart.
- MACCORMACK, C. D.**  
North Baltimore, Ohio.  
V.S., Ontario Veterinary College, 1906.  
Vouchers: R. H. Aull and C. L. Sanders.
- MINDELL, JACK**  
R.F.D. No. 1, West Albany, N. Y.  
D.V.M., Cornell University, 1935.  
Vouchers: H. N. Lasher and G. R. Ellmers.
- MURPHY, C. A.**  
Jacksonville, Mo.  
D.V.M., St. Joseph Veterinary College, 1918.  
Vouchers: Ashe Lockhart and G. L. Dunlap.
- MURPHY, E. E.**  
New Haven, Mo.  
D.V.M., Kansas City Veterinary College, 1915.  
Vouchers: Ashe Lockhart and G. L. Dunlap.
- NELSON, CHESTER L.**  
Hdqs. II Army Corps, A.P.O., No. 302, c/o  
Postmaster, New York, N. Y.  
B.V.Sc., Ontario Veterinary College, 1911.  
Vouchers: Ashe Lockhart and G. L. Dunlap.
- OWEN, ROGER N.**  
Box 213, Hiram, Ohio.  
D.V.M., Ohio State University, 1923.  
Vouchers: N. R. Berthold and W. F. Guard.
- ROESCHLEIN, W. H.**  
15 S. Dayton St., Worthington, Ind.  
D.V.M., Indiana Veterinary College, 1910.  
Vouchers: F. C. Tucker and J. E. Carrico.
- ROWLES, L. W.**  
1412 Jewell, Topeka, Kansas.  
D.V.M., Kansas City Veterinary College, 1912.  
Vouchers: Chas. W. Bower and A. Kushner.
- RUSSELL, H. B.**  
1616 Buchanan Ave., St. Joseph, Mo.  
D.V.M., Kansas City Veterinary College, 1913.  
Vouchers: Ashe Lockhart and Glen L. Dunlap.
- RUTHERFORD, FREDERICK W.**  
Maysville, Mo.  
B.V.Sc., Ontario Veterinary College, 1910.  
Vouchers: Ashe Lockhart and G. L. Dunlap.
- STEIN, PERRY D.**  
139 Groveland Pl., San Antonio, Texas.  
D.V.M., Texas A. & M. College, 1941.  
Vouchers: U. E. Marney and J. W. Burby.
- WILLIAMS, J. D.**  
Box 341, Colorado City, Texas.  
D.V.M., Texas A. & M. College, 1935.  
Vouchers: N. A. Cox and V. V. Cox.
- WUEST, E. C.**  
P. O. Box 45, Platte City, Mo.  
D.V.M., St. Joseph Veterinary College, 1914.  
Vouchers: Ashe Lockhart and G. L. Dunlap.

### Second Listing

- Alme, H., Box 86, Amery, Wis.  
Badger, Joseph E., 250 Main St., Madison, N. J.  
Bortman, E. A., 5004 Cass, Utica, Mich.  
Conner, Roy E., Fort Worden, Wash.  
Dayman, G. L., 463 N. Lake, Pasadena, Calif.  
Digman, Robert L., 6621 S. Richmond St., Chicago, Ill.  
Elliott, Charles H., c/o 33rd Div. Hq. A.P.O. No. 33, Fort Lewis, Wash.  
Gomez, E., Calle 9 entre G. y H. Vedado, Havana, Cuba.  
Jung, O. E., Jr., 175 W. Glenn, Auburn, Ala.  
Master, D. C., Box 272, Clinton, N. J.  
Salerno, R. C., 317 Linden Ave., Waterloo, Iowa.  
Stresser, T. C., 5144 W. Grand Ave., Chicago, Ill.  
Wineland, E. D., Booneville, Ark.

### 1942 Graduate Applicant

- (First Listing)  
Colorado State College  
GREEN, WILLIAM W., D.V.M.  
213 Old Capitol Bldg., Olympia, Wash.  
Vouchers: A. W. Deem and I. E. Newsom.

## COMING MEETINGS

- National Association of B.A.I. Veterinarians.  
La Salle Hotel, Chicago, Ill., December 2-4, 1942. F. A. Imler, 19 Federal Building, Kansas City, Kan., secretary-treasurer.
- Chicago Veterinary Medical Association. Palmer House, Chicago, Illinois, December 8, 1942. F. A. Anderson, 157 W. Grand Avenue, Chicago, Ill., secretary.
- Kansas City Veterinary Medical Association. Hotel President, Kansas City, Mo., December 15, 1943. E. F. Sanders, c/o Jensen-Salsbery Laboratories, Kansas City, Mo., secretary.
- Northern Illinois Veterinary Medical Association. Quarterly meeting, Hotel Nelson, Rockford, Ill., Dec. 16, 1942. C. R. Collins, Dixon, Ill., secretary.
- Western New York Veterinary Medical Association. S. P. C. A. Building, Buffalo, New York, December 17, 1942. F. F. Fehr, 243 S. Elmwood Avenue, Buffalo, N. Y., secretary.
- American Association for the Advancement of Science. New York, N. Y., Dec. 28, 1942-Jan. 2, 1943.
- Society of American Bacteriologists. Columbus, Ohio, Dec. 28-30, 1942. W. B. Sarles, Agricultural Hall, University of Wisconsin, Madison, Wis., secretary.

- California State Veterinary Medical Association. California Polytechnic School, San Luis Obispo, Calif., Jan. 4-6, 1943. E. E. Le Donne, 6200 Rockwell St., Oakland, Calif., secretary.
- University of Pennsylvania Conference for Veterinarians. University of Pennsylvania, Philadelphia, Pa., Jan. 5-6, 1943. G. A. Dick, dean, School of Veterinary Medicine, 39th and Woodland Ave., Philadelphia, Pa.
- Intermountain Livestock Sanitary Association. Salt Lake City, Utah. Jan. 6-7, 1943.
- Ohio State Veterinary Medical Association. Deshler-Wallick Hotel, Columbus, Ohio, January 6-8, 1943. R. E. Rebrassier, Ohio State University, Columbus, Ohio, secretary.
- Cornell University Annual Veterinary Conference. New York State Veterinary College. Ithaca. Jan. 6-8, 1943. W. A. Hagan, dean, New York State Veterinary College, Ithaca.
- Kansas Veterinary Medical Association. Wareham Hotel, Manhattan, Kan., January 11-12, 1943. Chas. W. Bower, 1128 Kansas Ave., Topeka, Kan., secretary.
- Minnesota State Veterinary Medical Society. Lowry Hotel, St. Paul, Minnesota, January 11-12, 1943. H. C. H. Kernkamp, University Farm, St. Paul, Minn., secretary.
- Rhode Island Veterinary Medical Association. Narragansett Hotel, Providence, R. I., January 12, 1943. J. S. Barber, 560 Pleasant St., Pawtucket, R. I., secretary.
- Indiana Veterinary Medical Association. Hotel Severin, Indianapolis, Ind., January 12-14, 1943. Charles C. Dobson, New Augusta, Ind., secretary.
- Southeastern Michigan Veterinary Medical Association. Meeting at 3919 John R. Street, Detroit, Mich., January 13, 1942. F. D. Egan, 17422 Woodward, Detroit, Mich., secretary.
- Veterinary Medical Association of New Jersey. Hotel Hildebrecht, Trenton, N. J., January 14, 1943. J. R. Porteus, P. O. Box 938, Trenton, N. J., secretary.
- South Carolina Association of Veterinarians. Wade Hampton Hotel, Columbia, S. C., January 19, 1943. R. A. Mays, 415 J. C. Calhoun State Office Bldg., Columbus, S. C., secretary.
- Michigan State College Post-Graduate Conference for Veterinarians. East Lansing, Mich., Jan. 25-29, 1943. Ward Giltner, dean, Division of Veterinary Science, Michigan State College, East Lansing, Mich.
- Iowa Veterinary Medical Association. Hotel Fort Des Moines, Ia., Jan. 26-28, 1943. C. C. Franks, 855 Thirty-First St., Des Moines, Ia., secretary.
- District of Columbia Veterinary Medical Association. Mayflower Hotel, Washington, D. C., January 26, 1943. Wm. M. Mohler, 5508 Nebraska Ave., N. W., Washington, D. C., secretary.
- Connecticut Veterinary Medical Association. Bond Hotel, Hartford, Conn., February 3, 1943. Geo. E. Corwin, Lock Box 53, Suffield, Conn., secretary-treasurer.
- Nebraska State Veterinary Medical Association, Lincoln, Neb., February 4-5, 1943. S. W. Phillips, David City, Neb., program chairman.
- North Carolina Conference for Veterinarians. N. C. State College, 205 Polk Hall, Raleigh, N. C., January 26-29, 1943. D. C. Grinnells, State College Station, Raleigh, N. C., program chairman.
- New York City Veterinary Medical Association. Hotel New Yorker, 34th Street, New York, N. Y., December 2, 1942. C. R. Schroeder, Box 247, Pearl River, N. Y., secretary-treasurer.
- New York City Veterinary Medical Association. Hotel New Yorker, 34th Street, New York, N. Y., January 13, 1943. C. R. Schroeder, Box 247, Pearl River, New York, N. Y., secretary-treasurer.
- St. Louis District Veterinary Medical Association. Roosevelt Hotel, St. Louis, Mo., December 4, 1942. J. P. Torrey, P. O. Box 87, East St. Louis, Ill., secretary.
- Maine Veterinary Medical Association. Waterville, Maine, January 13, 1943. J. F. Witter, University of Maine, Orono, Maine, secretary.
- National Assembly of Chief Livestock Sanitary Officials. Hotel LaSalle, Chicago, Ill., Dec. 1, 1942. R. A. Hendershott, Trenton, N. J., secretary.
- United States Livestock Sanitary Association. LaSalle Hotel, Chicago, Ill., December 2-4, 1942. Mark Welsh, College Park, Md., secretary.
- Ontario Veterinary Association. Royal York Hotel, Toronto, Ont., Jan. 28-29, 1943. F. H. S. Lowrey, 2555 Bloor St., W., Toronto, sec., H. S. Mac Donald, 1632 Bloor St., W., Toronto, program chairman.
- San Diego County Veterinary Medical Association. San Diego, Calif., December 21, 1942. R. D. Immenschuh, 4395 70th Street, La Mesa, Calif., secretary.

## MEETINGS POSTPONED

- South Dakota Veterinary Medical Association. J. T. McGilvray, R. R. No. 3, Sioux Falls, S. Dak., secretary-treasurer. Meetings for the South Dakota Association have been postponed for the duration.
- Houston Veterinary Medical Association. Archie Stallings, 801 Waugh Drive, Houston, Texas, secretary. Meetings for the Houston Association have been postponed for the duration.

Virginia State Veterinary Medical Association. E. P. Johnson, Box 593, Blacksburg, Va., secretary. Winter meetings have been postponed.

Wisconsin Veterinary Medical Association. B. A. Beach, University of Wisconsin, Madison, Wis., secretary. Annual (winter) meeting cancelled.

## DEATHS

H. W. Conner (K. C. '12), Bloomfield, Ia., died August 2, 1942.

W. L. Curtis (C.V.C., '08, N.Y.-A.V.C., '11), 56 years old, Los Angeles, Calif., died Oct. 11, 1942. He had been a practitioner in the small animal field. He joined the AVMA in 1923.

Mrs. G. A. Johnson, Orlando, Florida, wife of G. A. Johnson, one time prominent figure in the U. S. Bureau of Animal Industry, and the commercial circle of Kansas City, died Oct. 24, 1942, after a long illness. "Had Mrs. Johnson lived until Dec. 23 (1942), we would have been married 52 years," the Doctor writes.

Charles C. Officer, C.S.C. '14, died at his home in Ferris, Texas, July 16, 1942. He joined the Association in 1921. In the record, Dr. Officer was classified as "Rural Mail Carrier and Veterinarian."

## What the Newspapers Say

### *Farm Journal and Farmer's Wife:*

*Which Is Right?* When the American Veterinary Medical Association met in Chicago, two Purdue researchers reported that by removing part of the thyroid gland, they had secured faster gains in steers. This is just about the opposite of a suggestion in the 1942 Yearbook of Agriculture, that extra thyroid may be a means of increasing the meat supply.

### *Hoard's Dairyman:*

High school and beginning college students should give serious consideration to taking up veterinary medicine as a life's work. There is a definite need for more well trained, competent veterinarians. We are speaking particularly for "large animal" men, not cat and dog specialists. Livestock health, a serious and costly farm problem, deserves the attention of many more practicing, laboratory trained veterinarians.

In our opinion, a practicing veterinarian should be raised on a farm. He should know the farmer's point of view and his problems.

He should "know" his livestock and, above all, he should have a love for the cattle, hogs, horses, and poultry with which he works.

The problems of today are not limited to "curing" an ailment. More and more, the veterinarian must work with his microscope as he battles mastitis, Bang's disease, and trichomoniasis. His training must not be limited to medicine and surgery but should emphasize prevention and sound area livestock health programs. He must be trained to be a leader of the livestock industry of his community. Having graduated and gone into practice, he must "keep up" with his field and practice the latest approved methods of his profession.

The veterinarian has a tremendous responsibility to his country, the livestock industry, and his profession. In return, his work is remunerative and leaves him with a feeling of satisfaction for having been of service to the livestock he loves and the men he serves.

### *Cedar Rapids (Ia.) Gazette:*

Speaking at the Southwest Iowa Veterinary Medical Association, at Council Bluffs, last night, Lieut. Governor Hickenlooper called the veterinarians the "guardians of the country's meat supply."

### *Nebraska City News-Press:*

(Oct. 21, 1942)

CHICAGO — (U.P.) — Dr. I. F. Huddleson, Michigan State College, reported to the American Veterinary Medical Association Tuesday that "brucelliminin," a newly discovered bacterial-free vaccine may soon revolutionize the fight against Bang's Disease which afflicts part of the nation's dairy cattle every year.

Huddleson says that he and his associates had succeeded in crushing the cells of brucella organisms and obtained from them a water-soluble agent which induces active immunity against the disease.

### *Omaha Journal Stockman:*

(Oct. 12, 1942)

Nebraska veterinarians who have registered so that their services are available to meet either military or civilian needs were advised today that their profession now leads in volunteering for war service, Dr. W. T. Spencer, chairman of the Nebraska state veterinary preparedness committee, reported.

According to official word received from Washington, more than 95 per cent of the veterinarians in the United States have already filed enrollment forms and questionnaires with the procurement and assignment office of the war manpower commission.



## U. S. GOVERNMENT

**Government Takes over Meat Grading.**—The large packers (Swift, Armour, Cudahy) have entered into an agreement with the USDA to turn over all grading of beef and veal to the government forces. The agreement will require the installation of meat grading at 78 of the plants of these firms. Other packers are expected to follow suit. The change grew out of injunction suits intended to correct the evils of evading price regulation by grading beef and veal which was conducted on a voluntary basis but which permitted the packers to use the government stamp showing the gradation. Up to the present time, meat grading has been done on but a small scale.

**United States Army.**—Comes a letter from Mrs. C. L. Nelson, wife of Major Nelson, revealing the Major's station as "Somewhere in Great Britain," and reporting that he, along with three other veterinary officers, attended the meeting of the National Veterinary Medical Association of Great Britain and Ireland which was held in London the latter part of September. Quoting "He attended a luncheon at the Mansion House which was held in connection with the convention, Dr. W. R. Woodbridge, presiding. The Minister of Agriculture and Fisheries, responded to a toast "The Veterinary Profession," and President Woodbridge announced the founding of a "Veterinary Educational Trust" designed to raise and allocate funds for improving veterinary education. s/(Mrs.) Blanche P. Nelson, Long Beach, Calif., formerly Moberly, Mo.

## Meat Rationing

The Office of War Information, Food Requirements Committee, Oct. 26, 1942, answers a list of questions which have been raised in connection with the "Share the Meat" program:

**Q.** Does the 2½ lb. allotment include lunch-eon meats?—**A.** Yes.

**Q.** Are coupons going to be used?—**A.** Not at present. When ration books have been printed and distributed and meat placed on a rationing basis, coupons will be used.

**Q.** How is the amount purchased now going to be controlled?—**A.** On a purely voluntary and patriotic basis.

**Q.** Will families consisting of only two adults be able to buy large sized roasts?—**A.** Yes, but if its weight is 5 lb. or more they will not be able to eat any other kind of meat during the week.

**Q.** Will prices be controlled?—**A.** Yes. They have been controlled since last spring.

**Q.** Does the ration allowance include dinner guests?—**A.** No. Dinner guests are expected to deduct what they eat at your home from their personal allowances.

**Q.** How much will invalids get?—**A.** Whatever the doctor has prescribed, whether the amount is above or below 2½ lb. weekly.

**Q.** How much will children get?—**A.** Children below six years of age are entitled to ¾ of a lb. weekly. Children between six and twelve may receive 1½ lb. All above that age, including adults, are entitled to the weekly 2½ lb.

**Q.** Are light meat eaters entitled to get meat?—**A.** They are expected, of course, to stay within their share.

**Q.** Does the 2½ lb. include fats and bones?—**A.** Yes.

## Student Enrollment for the Academic Year 1942-43

| SCHOOL                         | FRESH.     | SOPH.      | JUN.       | SEN.       | SPEC.    | GRAD.     | TOTAL        | 1941-42       | CHANGE     |
|--------------------------------|------------|------------|------------|------------|----------|-----------|--------------|---------------|------------|
| Alabama Polytechnic Institute. | 81         | 53         | 52         | 63         | 0        | 0         | 249          | 238           | +11        |
| Colorado State College.....    | 46         | 42         | 35         | 31         | 0        | 0         | 154          | 164           | -10        |
| Cornell Univer'ty .....        | 39         | 43         | 37         | 37         | 0        | 4         | 160          | 170           | -10        |
| Iowa State College.....        | 64         | 63         | 61         | 58         | 0        | 7         | 253          | 254           | -1         |
| Kansas State College.....      | 64         | 50         | 55         | 46         | 0        | 2         | 217          | 216           | +1         |
| Michigan State College .....   | 64         | 61         | 56         | 58         | 0        | 5         | 244          | 244           | ....       |
| Montreal, University of .....  | 9          | 7          | 5          | 9          | 0        | 0         | 30*          | 46            | -16        |
| Ohio State University.....     | 72         | 65         | 64         | 58         | 0        | 7         | 266          | 250           | +16        |
| Ontario Veterinary College.... | 32         | 44         | 22         | 44         | 0        | 0         | 142          | 169           | -27        |
| Pennsylvania, University of... | 54         | 49         | 38         | 49         | 0        | 0         | 190          | 192           | -2         |
| Texas A. & M. College.....     | 61         | 68         | 73         | 64         | 0        | 0         | 266          | 326           | -60        |
| Washington, State College of.. | 47         | 36         | 39         | 32         | 0        | 0         | 154          | 152           | +2         |
| <b>Totals (1942-43) .....</b>  | <b>633</b> | <b>581</b> | <b>537</b> | <b>549</b> | <b>0</b> | <b>25</b> | <b>2,325</b> | <b>2,421</b>  | <b>-96</b> |
| <b>Totals (1941-42) .....</b>  | <b>634</b> | <b>579</b> | <b>575</b> | <b>591</b> | <b>9</b> | <b>33</b> | <b>2,421</b> | <b>2,427†</b> | <b>-6</b>  |

\*Does not include 10 "first year" students who have been considered as pre-veterinary students; pre-veterinary students are not included in above table.  
†Total number of students for 1940-41.

Q. Does the Program call for 2½ lb. weekly of each kind of meat or all meats?—A. All beef, veal, pork, lamb, mutton taken from the dressed carcass.

Q. Can a person get the kind of meat he wants or must he take what is left over?—A. He can order the kind of meat he wants and if the butcher has it he will receive it.

Q. Can one buy a large amount of meat from farmers and keep it?—A. Yes, but he is required to limit himself to his weekly share of 2½ lb.

Q. Are those who raise their own meat supply also expected to "Share the Meat"?—A. Yes.

Q. What are the regulations in regard to eating in restaurants?—A. Restaurant menus will indicate the weight of the meat portion served and the patron will deduct this from his weekly allowance.

Q. Will chicken and fish be served under the 2½ lb. allowance? A. No.

**Coöperative "Bull Rings."**—More than 5,000 coöperative "bull rings" have been set up in different parts of the country by the Farm Security Administration. In one Kansas county, 13 families were thus able to buy purebred heifers from Vermont and New Hampshire, and nearly a score of Arkansas communities have been able to carry out community projects against wood ticks. Coöperative movements of this sort increase production of feed and food. Analogous aid is given to poultry growers.—*From Clip Sheet, USDA, October 11.*

**War Production Board in Scientific Research.**—One is apt to think of the WPB as a board concerned only in the production of current wartime matériel, notwithstanding that its efforts reach deeply into the field of scientific research. Since July, 1940, out of 143 research projects, 83 relate to the processes of production. The research projects are operated on a definite plan for which C. F. Leith of the University of Wisconsin acts as agent for the WPB, which utilizes the research facilities of many industrial laboratories: Bell Telephone, Westinghouse, General Motors, General Electric, Chrysler, Mellon Institute, California Institute of Technology. The pursuit is the kind of research that will yield results in time to be used in the war emergency.—*From Science, July 31, 1942.*

**Major Livestock Maladies Controlled.**—The United States is entirely free of 10 to 15 livestock maladies that are of major importance in the world of today, is the way Chief John R. Mohler of the Bureau of Animal Industry announces the disease situation on American farms. "Bovine tuberculosis, and tick fever have been practically eradicated and equine encephalitis, hog cholera, and pullorum disease are under effective control," Chief Mohler told the world in a recent release of

the USDA. The coöperation of the livestock owners is invited to further reduce losses from animal diseases, and they are requested to make a close study of local dangers by consulting veterinarians on matters of prevention, diagnosis, and the use of biological products.

**Canned Dog Food.**—An Office of War Information release announces that "canned dog food is now but a memory." Production of the new dehydrated foods totals less than 10 per cent of the pre-war manufacture of dog foods, and no allowance is made for even a marrow bone in the government's newly inaugurated voluntary "Share the Meat" program. If one feeds meat to a dog, it will have to be taken from the 2½ lb. per person set down for civilian adults. Nutritionist Earle, of the Bureau of Animal Industry, is quoted as saying that dogs can be kept strong and healthy without red muscle meat, provided the proteins, iron, and vitamins are replaced in the dog's diet.

**New Research Coördinator.**—Stanley B. Flacker, Ph.D., chief of plant-disease control of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, was appointed research coördinator on the staff of Eugene P. Auchter, Ph.D., agricultural research administrator. The new appointee will coördinate research dealing with plant diseases, insects affecting plants and animals, and attend to plant-pest control projects. James F. Martin, Ph.D., succeeded Dr. Flacker in the division of plant control.

**Dr. Hawkins Retires.**—Lon A. Hawkins, head of the division of control investigation in the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, has been retired and the vacancy has been filled by the appointment of Curtis P. Clausen, head of the division of foreign insect and parasite introduction. Dr. Hawkins has been with the USDA for 35 years. His successor (Clausen) is well known in the veterinary field.

## Mining the Outer Crust

"Headed for a Bellyache" is the title of a cartoon in *Successful Farming*, carrying the ditty:

Rock-A-Bye-Baaa BEEee  
In the tree top,  
When John L. gets in  
Your cow-shed will rock.

When the miners' union begins to mine the surface of the land, they will find that farmers have done quite a bit of mining themselves through the years.

## AMONG THE STATES

### Colorado

**Plants Injurious to Livestock.**—The State College Experiment Station has added seven more plants to the list of those known to be poisonous to livestock, says a release of the 4-H Club for October 22, wherein Dr. Floyd Cross of the veterinary faculty explains to the boys that when "staggers" is reported among cattle on wet ground, the possible cause is eating plants containing prussic acid. The new injurious plants discovered are two species of common rushes, cord grass, sandbar willow, bittergrass, a wild aster, and a species of wild plum.

### Connecticut

**State Association.**—At the quarterly meeting held at New Haven, November 4, legislation for improving the veterinary practice act was discussed. Jack Baird, of the *Hartford Times*, a feature writer, spoke on "Dogs in War." The next meeting will be in Hartford, Feb. 3, 1942.  
s/Edwin Laitinen, *West Hartford*.

### Florida

**State Association.**—For the 1942 meeting, held at Hotel Thomas, Gainesville, October 25-27, the following program was catalogued:  
Col. G. W. Brewer, U. S. Army, "The Army Veterinary Corps."

E. E. Chambers, Trion, Ga., "Dairy Practice," a moving picture.

E. V. Smith, Alabama Polytechnic Institute, Auburn, Ala., "Poisonous Plants."

J. L. Ruble, "Procurement and Assignment Service."

J. C. Wright, Atlanta, Ga., "Small Animal Practice."

R. S. Glasscock, University of Florida, "Meat for Defense."

B. E. Carlisle, Camille, Ga., "Equine Colic."

S. T. Johnson, "Heartworm Patients," a film.

J. V. Knapp, "The Civilian Veterinarian."

H. W. Willis, "Swine Disease Control."

C. C. Carlton, "Bovine Ovariectomy."

D. S. Sanders, "Bovine Mastitis."

Among the entertainments were banquet and dance, theater party, visit to the State Museum, bridge party and an outdoor lunch. The new officers of the Association are: G. E. Page, Mariana, *president*; V. L. Bruns, Williston, *secretary-treasurer*; and C. E. Bild, Miami, *vice-president*.

### Idaho

**Writes E. T. Baker**, veterinary author of Moscow.—"Just a word to tell you how much I have enjoyed your articles on preparing manuscripts. They are very helpful. The reason why our profession has not been given more publicity is due to the fact that so many of its members will not write or make themselves articulate. I have just written an illustrated book of several hundred pages which will be published by Macmillan's. It will be called *The Home Veterinarian's Handbook*. It is written for the laity, answers over 20,000 questions, and advises calling a veterinarian for just about everything."

### Illinois

**The Animal-Disease Situation.**—The diseases of farm animals in this state deserving special attention were indicated in *Animal Pathology Exchange*, issue of September, 1942. They were named and described as follows:

**In Cattle.**—Blackleg, brucellosis, mastitis, calf scours and pneumonia, encephalitis (not to be confused with the equine malady of the same nature), acetoneuria, and pseudorabies or "mad itch."

**In Sheep.**—Ecto- and endoparasites (stomach worms, nodular worms), scabies, ketosis or pregnancy disease.

**In Horses.**—Encephalitis or sleeping sickness, worm parasites. The breeding of horses is recommended as the only self-reproducing power on the farm.

**In Poultry.**—Trichomoniasis, hexamitiasis of turkeys, pullorum, fowl pox for which the Department of Animal Pathology furnishes vaccine through local veterinarians.

**In Swine.**—Hog cholera, swine erysipelas, salmonellosis or infectious enteritis. The importance of sanitation is stressed and the hazards of over-stocking of premises are pointed out.

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**Midwest Small Animal Association.**—Forty-four veterinarians from five states attended the fifth annual clinic held at Peoria, Ill., Nov. 5, 1942.

**Miss Virginia Krichel**, Department of Pathology, Graham Hospital, Keokuk, Iowa, was assisted by Dr. Earl R. Kennedy of Moline, Ill., in her demonstration of scientific apparatus and the technique used in blood analysis of cats and dogs.

**J. H. Krichel**, Keokuk, practitioner, presented a case report of leucemia in swine, the diagnosis having been made by the blood-cell count. R. B. Carter, Alexis, Ill., led the discussion.

**P. J. Meginnis**, president, reported on a case of *Salmonella choleraesuis* infection in swine. L. K. Firth, Canton, Ohio, demonstrated re-



moval of the soft palate in the bulldog, and other dog surgery.

**W. C. Glenney**, Elgin, Ill., at the banquet held at the Hotel Burlington that evening, spoke on "The Veterinary War Effort in Illinois."

**C. C. Franks**, Des Moines, chief, Division of Animal Industry, Iowa Department of Agriculture, told of his department's efforts by radio and the printed word, urging greater collaboration and coöperation of livestock owners with veterinarians in the battle for Our Way of Life. Dr. Franks stated that unless livestock owners take veterinarians into their confidence, use better methods, and accept competent veterinary advice on sanitation, hygiene, housing, and feeding, Midwest agriculture will fall short of the expected livestock and poultry production in 1943.

s/A. R. Menary.

## Indiana

**Purdue Conference.**—The 30th short course for veterinarians was held at Purdue University, Oct. 15-16, 1942. Famous for bringing in talent from far and wide, this conference did not fall below par despite the war situation. Among the guest speakers from other states were:

**W. L. Boyd**, Chief of the Division of Veterinary Medicine, University of Minnesota. University Farm, St. Paul.

**W. W. Dimock**, Head, Department of Animal Pathology, University of Kentucky and President of the American Veterinary Medical Association, Lexington.

**W. F. Guard**, Professor of Surgery, College of Veterinary Medicine, Ohio State University, Columbus.

**J. G. Hardenbergh**, Executive Secretary, American Veterinary Medical Association, Chicago.

## Secretary of Agriculture Claude R. Wickard Not a Make-Believe Farmer



—Photo by Forsythe, USDA

"Secretary Wickard and his Shorthorns," the name of this widely circulated snapshot, is proof that the Secretary is an Indiana farmer, not in fancy but in fact. The camera also shows his preference in cattle breeds evidently inherited from the pioneer settlers of Ohio and Indiana—the Shorthorn, *Durhams* to the Buckeye and Hoosier farmers of the early days before the coming of the specialized breeds: Holstein-Friesians, Jerseys, Guernseys, and the white-faced and blacks of beef production. Like the famous Normandy cattle of France, the dual-purpose Durham was the favorite breed of the early American farmer.

H. S. McNutt, Veterinary Research Institute, Iowa State College, Ames.

L. Van Es, Head, Department of Animal Pathology and Hygiene, University of Nebraska, Lincoln.

P. V. Neuzil, President, Iowa State Veterinary Medical Association, Blainstown.

The presiding officers of the four sessions into which the program was divided were:

L. P. Doyle, Department of Veterinary Science, Purdue University.

C. R. Donham, *Ibid.*

J. F. Bullard, *Ibid.*

J. L. Axby, State Veterinarian of Indiana.

Outstanding wartime problems predominated in the program of each session: swine (Van Es, McNutt); horses (Dimock, Guard); cattle (Boyd, C. H. Smith); poultry (Neuzil, Tucker demonstrated diagnostic and therapeutic methods in vogue).

#### Iowa

**Garbage-Feeding a Nuisance.**—In the case of *State v. Strayer*, 209 N.W. 912, in which the defendant was charged with maintaining a nuisance for scattering garbage about his premises for the feeding of hogs, the Supreme Court of the state reversed the decision of the lower court and found the defendant guilty as charged by the local health board. In effect, the board was thus granted the right, in an emergency, to proceed in the abatement of a nuisance detrimental to public health and comfort. "In such cases," the Court declared, "so far as consistent with constitutional rights, the public interest should prevail against the interest of the individual."

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**The Eastern Iowa Association.**—With the usual attendance of around 300, the Eastern Iowa Veterinary Medical Association carried out another of its record-making meetings (the 29th annual) at Cedar Rapids, Oct. 13 and 14, 1942. Problems of local and national importance in the different branches of veterinary practice were headlines of the program. While horses, cattle, sheep and poultry subjects were features, it was the discussion of the more or less controversial disease problems of swine practitioners which predominated. Since eastern Iowa is a swine-breeding center of the first rank, its veterinarians do have "what it takes" to make that industry profitable.

The officers elected were J. L. Moles, Dike, president; J. M. Wilson, Winfield, vice-president; R. E. Elson, Vinton, secretary; A. R. Menary, Cedar Rapids, treasurer, and G. A. White, Riverside, member of the Executive Board.

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**Interstate Association.**—The twenty-ninth an-

nual session of the Interstate Veterinary Medical Association was held at Sioux City, Oct. 15 and 16, 1942. The program was featured by two subjects bearing upon the war effort: "The Veterinarian in World War II," by Col. Harold E. Egan, Veterinary Corps, U. S. A., and Lt. Col. L. A. Merrillat, Vet. Res., U. S. A., on "The Veterinary Services in Food Conservation." Close companions to these subjects were "Feeding Problems and Parasite Control in Sheep" by L. D. Frederick, of Swift and Company, who stressed the importance of sound sheep husbandry to meet war needs in wool and meat; "Diseases of Cattle" by A. H. Schmidt, of Minnesota; "Diseases of Swine" by C. E. Treman, of Iowa; "Diseases of Poultry" by Prof. Lee, of Iowa State College. Prof. Fowler, of Iowa State College, gave a classical review of some of the old problems of equine surgery, refreshing to the older group.

The officers elected were A. M. Anderson, Luverne, Minn., president; G. H. Leenert, Humboldt, Neb., vice-president; A. L. Malle, Pierson, Ia., secretary-treasurer.

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**Cedar Valley Association.**—Forty-eight veterinarians from 17 counties attended the dinner-meeting at Black's Tea Room, Waterloo, on Nov. 9, 1942.

Lt. Wm. S. Houk, V. C., U. S. A., presented an interesting paper on the duties of veterinarians in the army in connection with the meat-inspection service.

T. J. A. Laughlin, Agricultural Marketing Administration, U. S. Department of Agriculture, outlined the history and growth of the grading agency at Waterloo. Mr. Laughton stated that our Allies in the war are well satisfied with the great quantities of meat and meat-products delivered to them under the Lend Lease Act.

C. C. Graham, Wellsburg, led the discussion of the above talk.

E. W. Burke, Waterloo, veterinary inspector in charge, meat-inspection division of the BAI, told of the history of federal meat inspection and its service as now rendered to the public. Dr. Burke stated that federal employees in meat inspection work are proud of the high professional standards of the service, and its economy and usefulness to the public.

C. L. Crider, Elkader, presented a paper on "Bovine Obstetrics," demonstrating with a mechanical calf fetus. C. A. Stewart of Tripoli led the discussion.

President Helming appointed B. L. Caudill, Alta Vista, and W. C. McGrath, Elma, as the program committee for the meeting on December 14.

s/A. R. Menary.

### Kentucky

**Dr. Hare Officiates at Breeders Show.**—For the second consecutive year, Dr. Frank Hare of Lexington officiated at the Breeders Show conducted in connection with the Maryland State Fair. The contests at this show differ from others in that the judges are required to announce over the loud speaker system the bases for their decisions. The object is educational. Dr. Hare judged the Thoroughbreds from weanlings up: stallions, brood mares, fillies, etc. The assignment is a credit to the veterinary profession.

### Louisiana

**Veterinary Preparedness.**—E. P. Flower, chairman of the Veterinary Preparedness Committee, announced at the meeting of the state association in Baton Rouge that the veterinarians of the state were registered almost 100 per cent to serve when and where needed, and added that for the whole country 95 per cent were filed for enrollment.

### Maine

**State Association.**—The Maine association met for its regular quarterly session at Auburn, Oct. 14, 1942, to discuss current problems in controlling animal diseases in the state. Capt. Samuel Levine of the army air base near Portland demonstrated canned meats and meat products used in army rations, which are inspected by veterinarians. Lt. Stadler, Capt. Gillespie and Lt. Carl R. Benton are in such inspection work in the army, and all attended the meeting.

**H. N. Eames**, Brunswick, presented a paper on "The Herd Control of Mastitis," which was discussed by E. C. Moore of Lewiston.

**L. K. Green**, mayor of Auburn and former U. S. inspector, gave an enlightening demonstration of diseases of the reproductive system of dairy cattle.

**H. W. Jakeman**, Boston, recently retired president of the AVMA, was a guest of the meeting and spoke briefly on the rôle of the veterinarian in the war.

The 79th annual meeting of the AVMA in Chicago was reported by the state representative, G. M. Potter of Portland. Business included a committee report by S. W. Stiles of Portland on plans for the practitioner taking over the testing of accredited herds for bovine tuberculosis and "Bang's disease."

s/J. F. Witter, *Secretary-Treasurer.*

### Manitoba

**Personal.**—H. H. Ross of Brandon, prominent Dominion veterinarian, was elected president of the Kiwanis of that city for 1943. The Kiwanis clubs of the United States and Can-

ada rate among the hardest working groups of national and local populations. Their purpose is the promotion of high standards in social, business, and professional life, and the membership consists of the highest type of business and professional men.

### Michigan

**Brucellimunitin.**—Notable among the announcements circulated in the press is the newly discovered, bacteria-free vaccine for the prevention of bovine brucellosis developed by Dr. I. Forest Huddleson, Michigan State College, who has won world-wide distinction for his work in that field in recent years. Dr. Huddleson is quoted as saying that he and associates have succeeded in developing a water-soluble vaccine that confers active immunity against "Bang's disease."

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**Five Million Dollars for Veterinary Education.**—May I call your attention to an item of interest to veterinarians in the current issue of *Science* (Nov. 6, 1942, p. 420). It is a quotation from the *London Times* on a proposal to raise a million pounds (sterling) for a British Veterinary Education Trust Fund.

s/Dean Ward Giltner, *Michigan State College.*

### Minnesota

**State Board Wins Important Court Decision.**—The State Board of Veterinary Medical Examiners won its case in the Supreme Court against E. P. Walker, of Wilmar, who was convicted in the lower courts when charged with "gross moral and professional misconduct" for establishing and maintaining a "veterinary office" at Melrose, at which one G. A. Johnson practiced veterinary medicine under his (Walker's) license. Important as the decision is to the veterinary profession, it was deemed of sufficient significance for review by the Bureau of Legal Medicine and Legislation of the American Medical Association (*J.A.M.A.*, Oct. 24, 1942, pp. 644-645). The Board's charge of "gross moral and professional misconduct," on the ground of running display advertisements in newspapers announcing that he maintained a "veterinary office" at Melrose under the management of Johnson, a layman, was sustained; as was also the specific charge of treating a mare by the lay manager and collecting a fee of \$15.50. Johnson diagnosed the ailment as *spinal septicemia* and administered oral and intramuscular medication.

The petitioner's (defendant's) contention was that the "gross moral and professional misconduct" without explanation was void, because uncertain. To this, the Court answered that the use of broad, flexible terms in fixing such



standards "is unescapable." That is, the activities of Walker were "professional misconduct." Quoting: "*The lending of the professional name to another is a recognized professional misdeed.*" (Emphasis supplied.)



Dr. Robert Graham

#### Missouri

**Dr. Graham Addresses Clinical Conference.**—Robert Graham, chief of the Department of Animal Pathology and Hygiene, University of Illinois, addressed the Annual Fall Clinical Conference, Southwest Clinical Society, held in Kansas City, Oct. 5-8, 1942. Says the announce-

ment: "Rocky Mountain fever, rabies, bovine tuberculosis, bubonic plague, trichinosis, tularemia, actinobacillosis, listerellosis, udder infections, psittacosis, encephalitis, and brucellosis, make a dramatic story requiring a clear understanding. This decade tends to clear our ideas as to the correlation of many human-animal maladies."

#### Nebraska

**"Corn States" Expands Facilities.**—The already extensive production plant of the Corn States Serum Company in Omaha has been enlarged by the addition of a building for the housing of horses used in the production of anti-swine-erysipelas serum and other serums of equine origin, together with the rooms and equipment for collecting blood in modern



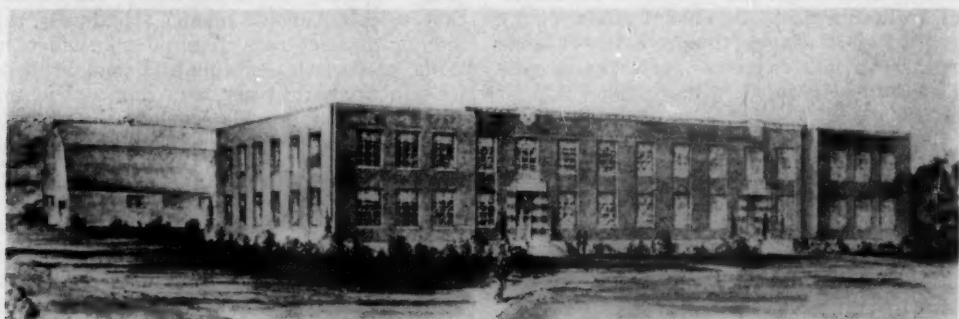
Fig. 2.—Interior of one of the wings of the building shown in figure 1.

fashion. The external construction is of pressed brick, the interior of glazed tile with impervious flooring, measured aerial capacity, ventilation, and heating facilities which combine to make up a sanitary barn for laboratory purposes. The disconnected building in the foreground is for housing the technical laboratory of the new unit. The smaller picture shows two rows of stalls in one of the wings.

Fig. 1.—Horse barn and laboratory building, erected mainly for the production of anti-swine-erysipelas serum.

#### Corn States





The New Clinic Building and Large Animal Hospital, College of Veterinary Medicine, State College of Washington, Pullman. There is also a class room and laboratory building under construction near by.

### New Mexico

**State Association.**—At the tenth annual meeting of the New Mexico Veterinary Medical Association held in Albuquerque in October, the following officers were elected: W. W. Wiseman, Silver City, *president*; L. E. Patten, Albuquerque, *vice-president*; and E. E. Krause, Clovis, *secretary*.

### Pennsylvania

**Personal.**—R. Adams Dutcher, head of the department of agricultural and biological chemistry, has been appointed a member of the sub-committee of the Food and Nutrition Board of the National Research Council.

### Texas

**State Association.**—The State Association officers met at Fort Worth, Sept. 27, 1942, and decided that in view of the uncertainty of the tire, gas and hotel facilities, a winter meeting of the Association would not be held. Instead, a meeting of the Board of Directors and officers of the Association will be held at College Station during the time the State Board holds examinations. So far, no definite date has been set for this meeting. No program will be presented, and only a business session will be held. Any member desiring to attend the meeting may do so.

### Washington

**State Association.**—The annual business meeting was held at Yakima, October 10. The attendance was 40, in lieu of the usual 75 or 80, owing to transportation difficulties. Plans were laid for incorporating the association. The following were elected: M. O. Barnes, Olympia, *president*; W. C. Kilpatrick, of the state inspection force, *vice-president*; and Helen Forsyth, of the state laboratory, *recording secretary*. The AVMA will be interested to know

that Dean Wegner, Washington State College, announced that the new veterinary building has been completed, waiting for the arrival of the furnishings and equipment, which will be second to none.

s/J. S. Ellis, *Resident-Secretary*.

### Wisconsin

**Pullorum-Testing and Flock-Selecting School.**—The college of agriculture, cooperating with the veterinary science and poultry husbandry departments, University of Wisconsin, conducted a school on the subjects named on Nov. 12 and 13, 1942. The scope of the curriculum is shown in the following program:

**V. S. Larson:** "The Significance of the Pullorum-Disease Program."

**Walter Wisnicky:** "The Cause, Symptoms, and Lesions of Pullorum Disease."

**B. F. Hadley:** "The Dissemination and Diagnosis of Pullorum Disease."

**Frank Moore:** "The National Poultry Improvement Plan."

**J. G. Halpin:** "Disqualifications and Breed Type."

**G. E. Annin, W. H. McGibbon, and W. W. Cravens:** "Judging Birds for Production."

**C. A. Herrick:** "Common Poultry Parasites."  
**W. H. McGibbon:** "Breeding for Resistance to Pullorum Disease."

**W. W. Cravens:** "Feeding Complete Rations to Produce Chicks that Live."

**B. A. Beach:** "Control of Pullorum Disease by Sanitation and Eliminating the Carriers."

In addition to these lectures, the staff demonstrated the restraint of birds for bleeding, the care of pullorum antigen, technics of the agglutination test and its readings, and laboratory practices in blood testing. A final examination of the class was conducted by Dr. Hadley.

# VETERINARY PREPAREDNESS

## Priorities and The Veterinarian

Numerous inquiries or requests for aid are received in the AVMA headquarters from veterinarians who have had difficulty in obtaining items of equipment or supplies used in profes-

sional work. The items range from common articles to special instruments.

A recent request for advice in securing a priority concerned 100 feet of half-inch Manila hemp rope needed for casting purposes. Inquiry revealed that such rope

is now practically unobtainable for civilian use. The following comments on the priority situation as it affects veterinarians individually or collectively may be of interest at this time. They are based on information contained in a recent 84-page bulletin, *Priorities and Industry* issued by the Division of Information of the War Production Board, and on WPB Priorities Regulation No. 10. The comments do not relate to such nation-wide rationing programs as have been applied to fuel oil, for example, nor to gasoline and tires in which veterinarians are included in the list of 20 preferred mileage users; these programs are administered by the Office of Price Administration and definite regulations govern the allotment of the materials or commodities rationed.

### THE PURPOSE OF PRIORITIES

The priorities system promulgated by the WPB is designed to control the flow of materials, especially critical materials and finished products made from them, in the nation's war economy. Without this control, it would be extremely difficult to secure the proper distribution and utilization of basic materials so as to provide for the manufacture of goods and equipment in the order of their importance to military and civilian use.

**Preference Ratings.**—One instrument of the priorities system is the priority or preference rating. These ratings indicate, by means of a numerical code, the relative importance of various uses of materials that are vital to the war economy. The pattern of these ratings governs the place which any particular order for supplies will occupy in production and delivery schedules.

### Factors Affecting Public Health and Safety.

Supplies, materials and equipment essential to the protection of public health and the care of the sick have been given an appropriate preference rating and allocation classification. In this category are included drugs and medicines, hospital equipment, surgical instruments, sterilizers, ultraviolet and x-ray apparatus and a whole host of related materials. Also included, are veterinary instruments.

The fact that the importance of certain materials and equipment to public health and safety has been recognized and rated does not guarantee that all requirements in that field can be met; it does mean that such commodities will be produced and distributed in so far as available basic materials permit and in the order of importance, i. e., priority classification, that applies in each case.

### Ratings for Individual Veterinarians Seldom Necessary.

—It is seldom necessary for an individual veterinarian to seek or obtain a priority or preference rating for the purchase of professional supplies. Instead, such priority restrictions as may exist have been applied, nearer the source, to the producer, manufacturer, and distributor who operate under the ratings that have been granted. This arrangement serves as a sort of remote control on priority matters and eliminates the need for the individual or final consumer to obtain preference ratings for the purchase of goods usually obtainable through regular channels.

### PRIORITY APPLICATIONS

If a given item for professional use is unobtainable, because of priority restrictions, through the usual trade sources, there is little likelihood that the veterinarian himself can obtain it as an individual or on an individual preference application. However, if a special need does arise, he may proceed as follows:

- a) Ask the manufacturer or distributor of the item to furnish him with the required application form;
- b) Call at or write to the nearest field office of the War Production Board (these are located in the larger cities) for Form PD-1A. This form contains instructions for its completion and, when filled out, must be mailed to the War Production Board, Priorities Division, Washington, D. C.

If the application made to WPB is granted, a preference rating applying only to the particular order involved is granted to the appli-





cant, who then puts a prescribed certification on the order he sends to his supplier. Anyone sending in a PD-1A application may enclose a stamped, self-addressed envelope requesting that his case number be sent to him. If, at the end of two weeks, the application has not been returned, he may write to WPB, giving his case number and the date of application.

The development of priorities has not been perfect by any means and continuous changes have been necessary to adapt the system to changing situations. By and large, however, industry is adjusting itself to the system and to the supply and demand for critical materials so that dislocations are gradually being overcome. Nevertheless, as the nation gets deeper and deeper into active prosecution of the war, it is more than likely that further dislocations will occur and further adjustments to lack of certain materials be necessary.

[Veterinarians may have to use substitutes frequently, improvise apparatus or equipment, or do without certain items entirely as a patriotic duty.—Ed.]

**War Production Board Changes.**—The Health Supplies branch of the Office of War Production has been merged with the Chemicals branch and F. J. Stock, of the Walgreen Drug Company, Chicago, was appointed *chief* and C. A. Willard, *deputy chief*, together with consultants comprising Floyd Thater, A. B. Pacini, John Williams, and Dan Dahlo. The new section was named the Drugs and Chemical Section. Dr. Pacini is recalled as the former director of the pharmaceutical department of the Archer, Daniels, Midland Company, Minneapolis and Chicago. Other unit chiefs named were J. T. Batson, Biological and Medical Chemicals; T. F. Currons, Botanical and Imports; Mark Merrell, Vitamins and Agar; and Robert Blair, Cosmetics units.

The Drugs and Chemicals Section has taken over the functions of the Drug and Pharmaceuticals Section, Health Supplies branch, and the Toiletries and Cosmetics branch of the WPB.

**War Production Board Control of X-Ray Equipment.**—Limitation Order L-206 issued on Oct. 20, 1942, by the War Production Board establishes strict control over the production and sale of x-ray equipment. The order prohibits the manufacture of any models or types other than those listed in a schedule accompanying the order; the schedule is a simplified one listing principally models required by the Army and Navy. This restriction is designed to expedite filling the needs of the armed forces.

Of interest to veterinary users of x-ray equipment is the fact that x-ray tubes, accessories and parts for maintenance and repair are excluded from the terms of the order, which likewise does not apply to the sale or transfer of used and rebuilt equipment. The Health, Safety and Technical Supplies branch of WPB emphasizes that full use must be made of existing equipment during the war and that such equipment should be repaired and kept in use wherever possible.

### Eligibility of Veterinarians for Supplementary Gasoline Rations

In announcing the rules to be applied to nationwide gas rationing, the Office of Price Administration recently made public a list of twenty preferred mileage uses. Included are physicians, surgeons, dentists and midwives for making necessary professional calls, provided such applicants are licensed as such by appropriate governmental authority; farm veterinarians for rendering professional services at agricultural establishments (farms), if the applicants are licensed by appropriate governmental authority and regularly render such professional services; and several other groups of individuals whose travel by car is essential to the war effort.

The restriction of preferred gasoline mileage to veterinarians designated as "farm veterinarians" continues a difference in treatment of one group of veterinary practitioners as compared with another which first entered the picture when automobile tire rationing became operative several months ago. At that time, presentations were made to the Office of Price Administration pointing out the public health and humane aspects involved in the medical and surgical care of small animals and the fact that, with many veterinarians in military service, practitioners who in recent years have devoted themselves largely to small animals are being called upon more and more for large animal and farm work.

With nationwide gasoline rationing in effect, the demand upon veterinarians servicing small animals to make calls at owners' homes will be vastly increased, whereas in the past most of these patients have come as office calls. This accentuates the problem of humane care for pet animals that urgently require medical or surgical treatment, and the public health implications if diseases such as rabies lack prompt diagnosis and quarantine.

The facts have been presented to the chief of the Gasoline Rationing Board of OPA, but at the time of going to press no advice of the decision made had been received.

## Appeals for Extra "Ground Gripper" Tire Equipment Denied

In some sections of the country where climatic conditions are unusually severe, it has been customary for veterinarians and physicians to have extra "ground gripper" tires for use on their cars during those seasons of the year when mud, snow and ice conditions are especially bad. The use of such tires has contributed much to the safe and efficient operation of automobiles and has also been economical, since the use of chains on regular tire equipment is avoided and the tires all last longer.

In view of the gasoline rationing program effective December 1, 1942, requiring that all tires in excess of five per car be turned over to the government, appeals were made to the Office of Price Administration to permit the retention of extra snow tires by veterinarians in those states where the climatic and travel conditions justified special consideration. The appeals were made by officials and members of the AVMA, based on arguments that the system in question was in the interest of safety, efficiency and rubber conservation. Among replies received, the following letter addressed to President W. W. Dimock is explanatory of the decision rendered by OPA:

OFFICE OF PRICE ADMINISTRATION  
Washington, D. C.

November 17, 1942

Dr. W. W. Dimock  
President, American Veterinary  
Medical Association

Dear Dr. Dimock:

This will acknowledge your letter of November 4, 1942, addressed to Mr. Henderson, regarding the Idle Tire Purchase Plan.

As you know, under the Idle Tire Purchase Plan all car owners are being asked to check the tires they have on hand, to select their five best tires, and to sell all others to the Government. A veterinarian may keep his mud and snow tires if he so

desires and turn in his conventional tread tires.

This Office has checked with at least a dozen tire experts to ascertain their judgment of the comparative vibration and relative rate of wear of the two types running on hard-surfaced roads at 35 miles per hour. All of these tire experts are in agreement that the increase in vibration and in rate of wear would be so slight that the mud and snow tires would be good for many years even though the tires were used in the summer as well as the winter.

We have given this matter careful study. We hope that you will assure the members of your Association that the problem of veterinarians' transportation is one of which we are keenly aware, and that it is our aim to assure them of as adequate means of transportation as the rubber situation permits.

s/Robert S. Betten,  
Chief, Tire Rationing Branch

It is understood that similar pleas by the medical profession have been denied, and that nobody will be permitted to retain more than the specified five tires per car.

Excess tires must be delivered to the Railway Express Agency for delivery to the Defense Supplies Corporation before gasoline rations will be issued to automobile owners.

Although this particular plea for modification of tire rationing has failed, the OPA has made one important correction of its requirements: In the early days of tire rationing, it was possible for unlicensed, non-graduate individuals who "treated livestock" to obtain tire purchase authorizations from local rationing boards in some states on the plea that their activities qualified them as "farm veterinarians." When the facts were presented to OPA, the regulations were revised so that the eligibility classification now provides that farm veterinarians for the purpose of tire-purchase certificates shall include only "veterinarians licensed as such by the appropriate governmental authority."

### The Unfairest of Unfair Tactics of the Selective Service

Draft boards located in college centers are "cashing in" on their quota of soldiers furnished for the war effort by stubbornly insisting that students registered with them while at college are subject to their call regardless of draft boards at their permanent place of residence which by right are entitled to judge the disposition to be made of such men, whether student or graduate. Small communities like Pullman, Wash., Ithaca, N. Y., Ames, Iowa, College Station, Texas, and others, where many veterinary students registered in good faith feeling that their true allegiance is with their home communities, are taking an unfair advantage in Selective Service.

The AVMA, in its connection with the Procurement and Assignment Service, has joined in a movement to iron out this unfortunate situation, in behalf of the persons concerned and of the communities they should represent in the armed forces. The importance of correcting this absurd situation is tremendous, not only now, but also in post-war adjustments when, for example, their home state would have to "blue pencil" the names for any bonuses or other honors which may be granted. We have in mind the concrete case of an Illinois World War I veteran who could never collect the \$300 bonus granted by that state because he happened to enter the military service while temporarily residing in Missouri. All students of all colleges who honored draft boards functioning in college towns by registering with them should band together in having this inconceivable misfortune corrected—NOW.

Going to war has been the young man's job ever since, in ancient times, man started out to build up what we named civilization. It's been a case of marching to battle to pave the way for the next generation and so on *ad infinitum*.

When peace costs more than war in human blessings it's time to set the zero hour and go over the top.

Our notion of running the production machinery in reverse gear is the placing of priorities on farm machinery and the failure to pay more attention to diseases of farm animals.

### Saving Tires

The life of an automobile tire set at the arbitrary figure of 100 miles is 140 at 30 m.p.h.; 70 at 50 m.p.h.; 50 at 60 m.p.h.; and 18 at 80 m.p.h. In round numbers, this means that tires at 30 miles per hour will last for twice as many miles as at 50 miles per hour, for three times as many miles as at 60 miles per hour, and for eight times as many miles as at 80 miles per hour. A chart substantiating these figures has been issued by the Society of Automobile Engineers, for the information of all concerned, which in the veterinary profession means everyone.

### Science Research in Modern Russia

What scientific research has done for modern Russia (= USSR) is being dramatized in its defense of Leningrad, Moscow and Stalingrad where Germanic brutality is meeting unexpected opposition.

Russia (*Science*, July 31, 1942) has had a dozen colleges and universities where more than 10,000 students have been trained in chemistry, engineering, medicine, agriculture and veterinary science. It is also the largest producer of artificial rubber, the high quality of which was demonstrated as far back as 1933; and the rubber factories are far removed from the German invaders. An example is the city of Noronezh, whose population since 1926 increased from 125,000 to 326,000 through the growth of the rubber-producing industry. The scientific Russia of World War I was an easy mark for the Kaiser's men of science as compared with the defense of 1942, under a régime which adopted science as a veritable obsession.

A worn out automobile tire filled with sawdust is not as good as an air-filled casing but it may answer the purpose, when the old tires go haywire.





Among those who labor to make our Nation strong, professional men feel the service they perform in the unfinished task - - to win the Victory and the peace for this and future generations.

We are happy at this Season to express thanks with a gratifying sense of accomplishment to that magnificent American, the Veterinarian.

**CORN BELT LABORATORIES, INC.**

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## An' Related Topics

### Invest in Your Country's Bonds



—From Dog News

A picture that speaks for itself—the American War Dogs of 1942—mobilized by the Remount Service, United States Army, to fight for freedom along with their keepers and operating in many parts of the world against the most brutal tyrants this civilization has ever known—not excluding Genghis Kahn, Alexander the Great (sic), Napoleon Bonaparte, all of whom were kindly killers compared with Adolph Hitler and his stooges.

---

**So, Buy War Bonds and Stamps**

---

### Not an If in a Carload

There's not an *if* in a carload of predictions on who is going to win this war. It's harder to decide what to do and where to place the pro-Axis and half neutral folks and nations when the war is over. There *are* such folks and nations in both hemispheres. Among your neighbors, the fence straddlers are no better than the pro-Hitler's.

---

### "America First"

"America first," battle cry of the isolationists, is all wrong in principle and in detail. Translated, it means "To hell with everyone but me," the antithesis of "Peace on earth, good will to all men," "Do unto others as you would have them do unto you," and many other teachings of the greatest of all men—famous Nazarene of A.D. 1.

---

### War Dogs in England

Speaking of war dogs, the *Veterinary Record* (Oct. 10) declares that "suitable dogs for the dog service are urgently required on loan for the duration of the war for employment by the Army and other Ministries." The plea is that no dog of potential use be destroyed on account of food shortage or other difficulties associated with war. In Britain, as in the United States, the remount and the veterinary services coöperate in providing war dogs, and to prevent the very thought of killing young, intelligent dogs suitable for aiding the United Nations in the struggle for their safety and for their honor.

Among the breeds most suitable for war purposes, cited in the *Veterinary Record*, are Collies, Airedales and Alsations. Few gun dogs, hounds, and terriers are of much use for war service. While dogs of 9 months to 2 years of age are the most desirable, older dogs should not be barred.

Nothing removed  
but the moisture



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"**N**OW that canned dog food is out—what should we feed our dog?" That's a question the veterinarian is often asked these days. And now, as before, he can recommend Pard with complete confidence.

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You will find New Pard economical to feed. 2 packages go just as far as 3 cans did—and no other food is normally needed. New Pard is tempting as ever to the canine appetite!

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## An' Related Topics

### Fine Spot for a Bayonet: Your Hypogastrium

You can "get it" in the tummy. Your enemies are cruel, crafty, wise, porcine and prepared, and will stop at nothing to accomplish their ends. If you don't understand, take time out (the election is over) to get wise to your plight, to the encroaching garrote tightening around your neck: Guam, Alaska, Philippines, Guadalcanal, New Guinea, Africa, Norway (We beat 'em to Iceland and Greenland).

Something new? Goodness, no! This fight started shortly after Christopher Columbus started westward for Cathay in the pursuit of trade. American independence, A. D. 1783, was but an armistice in a war-impooverished world.

It's a long time since these same barbarians sacked Rome, but Bismarck showed his hand in 1871 to repair the damage of Ghengis Khan and of Napoleon Bonaparte. Dewey heard the song in Manila Bay in 1898 and Pershing its echo in 1918 at Chateau Thierry, St. Mihiel and the Argonne. It's the song of the would-be conquerors—*Der Tag*—promising the Germanic races a day that never comes, because brute force and foul play are the weakest of human weapons.

But what we started to say is "keep the bayonets out of your inners". Be a stockholder in Uncle Sam, Inc., the corporation Hitler, Hirohito and El Duce (poor fish) want to own. Who wouldn't? The brawn and brain of a free people developed a way of life the folks across the sea never understood. Wealth and comfort and abundance are perhaps comprehensible to them, but the war cry of '76—*Independence*—is beyond their ken. It's the thing the Huns and Japs will find tough to break down.

Hitler says we're easy picking—mentally, morally, physically weak—so keep tongue to cheek, feet to ground, hands to pocket and buy another War Bond.



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Christmas Season  
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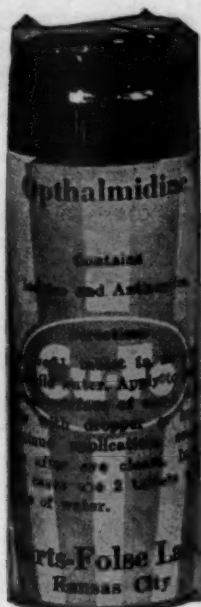
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Dean, Veterinary Faculty

## An' Related Topics

### Indicting the Food-Industry Personnel

Ever since the days of Teddy Roosevelt and the Big Stick, indicting the American meat packers has been a kind of pastime of the federal government, obviously at the expense of running down crooks of the "Touhy gang" type. But, says the *American Cattle Producer* (Oct. 1942), the government never won a case of this sort. The recent effort in that direction, predicts this spokesman of the cattle industry, will be another boomerang; "The Justice Department sleuths are picking at packingtown." This, the public is forced to believe.

Indicting the packers, like bringing criminal action against the makers of anti-hog-cholera serum and virus is, to say the least, "funny business" for men supposed to be the guardians of public welfare. Catching the culprits who opened the gates of Joliet prison to the worst gang of killers this country has ever known, and the slaughter of a Chicago family presumably by the men let out, would be more popular just now than baiting, without any public clamor, the food producers which the country sorely needs in these hours of trouble.

### Rationing

The rationing of meat is reveille for every veterinarian on the disease-fighting front.

To delay the rationing of meat would be an injustice to the millions of patriotic nonhoarders.

"Rationing, Britons know from bitter experience," says the OPA, "is a blessing in wartime."

Rationing is a preventive of hunger and long bread lines, a brake on kiting prices of food, and fair play for the masses.



## An' Related Topics

### Facts on Longevity Worth Remembering\*

Except among the aged, the first year of life is the most dangerous, the mortality age is from 10 to 14 years when the rate but 99.5 per 100,000. From 70 through 74, the rate is 6,109.5 and from 75 up, 12,909.8. Whites live longer than Negroes due to general poverty and poorer education of the latter.

The population of the United States is 66,061,592 men and 65,607,683 women: ratio, 100.7 to 100. But Negro women far outnumber the men: ratio 100 to 95. The life expectancy of American whites is as follows:

|                           |            |
|---------------------------|------------|
| North Central States..... | 64.7 years |
| Pacific Coast .....       | 63.4 years |
| Middlewest .....          | 63.3 years |
| New England .....         | 62.9 years |
| Deep South .....          | 62.4 years |
| Middle Atlantic .....     | 61.9 years |
| Mountain States .....     | 60.0 years |
| Average .....             | 62.5 years |

The lower life expectancy for the Mountain country is that so many persons settle there on account of tuberculosis.

\*Punch card figures obtained at the Census Bureau by *Pathfinder*.

### Shortage of Farm Labor Not a Fact

That farmers have suffered more than any other group by the induction of man power into the military service is just so much hooey—the cry of the political farm bloc whose wartime antics smells of Hitler propaganda.

The year 1942, during which more men went into the military service and war production industries than will ever be dislocated in future years, there were planted, cultivated, harvested, and marketed more crops than ever before in American history. Shortage of farm labor, is the cry of politicians, the country does not need. The generals and admirals would be better off without them and so would all of the people, including themselves on the long run.

## CLASSIFIED ADVERTISEMENTS

Twenty-five words or less, \$2.50; 8 cents for each additional word. Replies sent in care of the JOURNAL, 25 cents extra.

### Wanted

Small animal veterinarian assistant, excellent opportunity. Write details regarding experience. Groth's Animal Hospital, 2600 S. El Camino Real, San Mateo, Calif.

Veterinarian for Christensen Animal Hospital in Chicago, to be in charge of hospital, due to Dr. J. Kenneth Cone's call to military service. Base pay \$250 per month plus percentage, or straight salary of \$335 per month. Communicate with Christensen Animal Hospital, 730 Hibbard Road, Wilmette, Ill.

### Positions Wanted

December 1942 graduate desires position as assistant in mixed or large animal practice. Pennsylvania or other eastern state preferred. Healthy, draft exempt. Member Alpha Psi. Address "PE," c/o Journal of the AVMA.

Wanted Veterinary practice in southern or southwestern state. Have \$3,000 to invest. Practices furnished and sold in all states. "S" Kniest, 1537 S. 29th St., Omaha, Neb.

Veterinarian with four years experience in mixed practice desires change in location. Prefers mixed or large animal work with an established practitioner. Address "JS," c/o Journal of the AVMA.

To take over or lease mixed or small animal practice from veterinarian who has been inducted into Army. Can furnish references. Address "SH," c/o Journal of the AVMA.


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## **AMERICAN JOURNAL OF VETERINARY RESEARCH**

*Issued Under Date of*

**October 1940**

**January 1941**

**AMERICAN VETERINARY MEDICAL  
ASSOCIATION**

600 S. Michigan

Chicago, Ill.

## **An Related Topics**

*Business Week* declares that "The Food Crisis is Real." Farmers' boys are going into the Army, cattle are going to market prematurely owing to labor shortage, and the school boys sent out to help can't harness a horse, milk a cow, nor run a tractor.

### **Too Proud to Fight?**

To help win this war, the moral guard of the veterinary profession must be redoubled. Movements of whatever source, capable of interfering with the operations of the veterinary service which the nation has succeeded in developing, must be struck down as a moral obligation. Rackets once treated as only a nuisance must be manhandled wherever found, regardless of origin. The question of sustenance and endurance of soldier, sailor and civilian is the issue. If it's not dignified to fight for that, God help our country, we've turned soft.

If the Army's procurement of war dogs mounts to the 125,000 mentioned in the dog magazines, won't our face be red. We've declared that 25,000 is a lot of dogs.

The President, who has done more for farmers than they ever dreamed of by pouring billions into their laps during the lean years, gets a slap in the face from the farm leaders in Washington, in the way *Pathfinder* looks at the antics of the farm bloc. But, *Pathfinder* would be less astonished at the said antics if it knew what we know about that click.

Let's see, just where would we be going but for the chemists, the doctors, the nurses, the biologists, and the veterinarians, the forgotten groups in times of peace. Man seems to be getting himself into a jam, because he's pretty dumb. He's tops in killing the geese that hatch the golden ova. "Better things for better living through science," is not in the deck.

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# *Mulford* **Tyrothricin** VETERINARY

## FOR THE TREATMENT OF CHRONIC BOVINE MASTITIS



**T**yrothricin, a combination of gramicidin and tyrocidin, obtained from *Bacillus brevis*, has proved remarkably effective in the treatment of chronic bovine mastitis due to *Streptococcus agalactiae*.



Local instillation of aqueous or alcoholic tyrothricin preparations frequently produces intense irritation, swelling of the treated quarter, and a marked elevation of temperature. *Mulford Tyrothricin*, on the other hand, rarely exerts undesirable side-effects because the active principles are suspended in the aqueous phase of a bland, light mineral oil emulsion. When *Mulford Tyrothricin* is used it is possible to repeat treatment on the second and third day if desired.



*Dosage:* 20 cc., instilled aseptically into the milk cistern via the teat canal. Treatment may be given either during the lactating or non-lactating period.

**MULFORD TYROTHRIN VETERINARY** is supplied as follows:  
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***An' Related Topics***

**Food-Producing Power of  
Great Britain**

Three years of war have seen a great increase of food-producing efforts in Great Britain. The improvement was greater from the scientists' point of view than in any previous period ten times as long. The increase was accomplished by plowing up pastures and other grasslands, increasing the number of livestock, and better farming methods. Many acres of poor crop land, owing to mineral deficiencies, have been made to yield good crops. Swampy fen and bleak slopes have been transformed to farming land by scientific methods of soil treatment and fertilizing. A main feature of the program is the rationing of livestock down to the backyard pigs and chickens. Advisory centers and research institutes have been set up to distribute knowledge to farmers and to create new knowledge for farmers to draw upon. The raising of crops vulnerable to wire worms—well known to be an incurable menace—is avoided in soil where this larva is too numerous. Agricultural bureaus abstract from the scientific literature of the whole world for the edification of the British farmers. In this analysis of the food-producing power of Great Britain by the food correspondent of *The Times* (London), in the October 16, issue of *Science*, p. 361, no mention is made of the fight British veterinarians are waging against the suppressing effect of foot-and-mouth disease; bovine tuberculosis, mastitis, and brucellosis; and infections of poultry, sheep, and swine. In other words, precisely as in the United States, our British colleagues are fighting unseen and unsung in this battle for self-preservation, notwithstanding that the food-producing power of a nation is subordinate to the effectiveness of disease control in farm animals.

Poor France—victim of opportunists—may not be able to speak the language of 1793 until after the United Nations have successfully rescued her from her politicians.



# SELECTIVE CHEMOTHERAPY

*F*or antibacterial chemotherapy there are available a number of sulfanilamide compounds.

**Everyday Streptococcus Infections . . .** Owing to its relatively good tolerance, Neoprontosil is of particular value in many streptococcus infections which are encountered in everyday veterinary practice, including septicemia, strangles, metritis, mastitis, distemper, and meningitis. Relatively small doses have yielded very good results.

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**For Oral Administration:** Neoprontosil tablets of 5 grains, bottles of 50 and 500. (Caution: Not to be used for injection.) Neoprontosil capsules of 3 grains, bottles of 50 and 500. (Caution: Not to be used for injection.) **For Parenteral Administration:** Neoprontosil 5 per cent solution, bottles of 125 cc. with rubber diaphragm stopper.



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*Remember Pearl Harbor—December 7, 1941—so that our foes shall not forget!*

## An' Related Topics

### Tuberculin

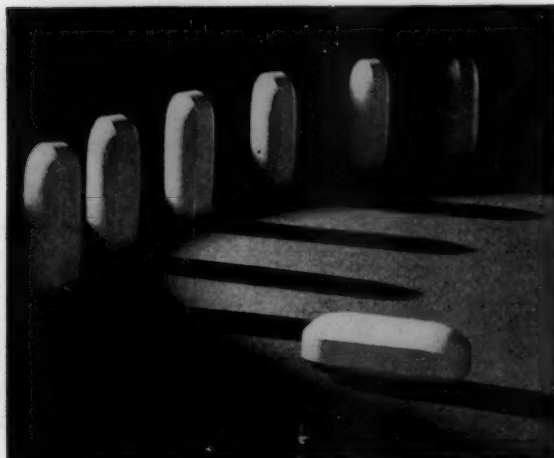
Tuberculin was first made by Robert Koch in 1890, and has been produced by the U. S. Bureau of Animal Industry since 1893, using the method of preparation described by Koch. No appreciable change in Koch's formula was made until the late 1920's when Marion Dorset, chief of the Biochemic Division of the Bureau produced an improved tuberculin grown on a synthetic medium.

In the program of bovine tuberculosis eradication, interdermal tuberculin testing replaced the old subcutaneothermic method, in 1920.

The first American dog show at which prizes were awarded was held in Chicago in 1874 under the sponsorship of that city's purebred dog fanciers.—*From The American Kennel Gazette.*

### Vitamin Biscuit

A biscuit two and a half inches long and three and one-sixteenth inches thick, said to contain all the vitamin A, B and D, iron, calcium, phosphorus and other minerals needed to balance the ration of man, has been perfected by Walter D. Kahn of New York, says *Science Digest*.



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### Phenothiazine Bolus

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## What Shall We Do with These?

In the articles on medical writing, mention is made of the coined words *strongyles*, *ascarids*, *trichomonads*, *spirochetes*, *amebas*, and others which have come into the vocabulary of veterinary medicine to stay, because they remove obstacles in sentence construction without any disrespect for the generic words. But, where is the coinage leading to? In recently published articles of excellent scientific value, we find:

|                         |              |
|-------------------------|--------------|
| autopsied               | ruminatory   |
| biopsied ( <i>sic</i> ) | ruminatoric  |
| posted                  | ruminatorics |
| leucotic                | virology     |
| ruminal                 | viricide     |

Let thou admit that transitive verbs for *autopsy* and *biopsy* would be remarkably convenient. *Posted*, of course, condemns itself forthwith and without debate. But, in regard to *autopsied* and *biopsied*, it requires but a glance at the derivation of these words to comprehend why medical writers have not flirted with them long ago.

They would be handy, but are too freakish to be considered.

In *re* the coinage of *ruminal* and *ruminatory* whether spelled with *i* or *e*, there is no crime committed. But, what are we to do with the other two—*ruminatoric* and *ruminatorics*—in view of their conglomerated suffixes? Their *orics* and *oric* tails are hard to reconcile with the rules of word fabrication.

As told in jest in "An' Related Topics" last month *virology* and *viricide*, confusing as they must be to the nonmedical scholar, seem to have broken into the inner sanctuary of medical terminology. Both are now in the newer medical dictionaries, notwithstanding that they really mean "the science of maidens," and "maiden-killing," respectively. *Virusology* and *virucidal* would be more appropriate, furthermore, and one more letter and a bit of tongue twisting should not be too objectionable, since the difference between *maiden* and *poison* is quite apparent.

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### *An' Related Topics*

#### Greek-Latin Emulsions

Says F.K.B., of Georgia (*J.A.M.A.*, Sept. 12, 1942), "My old professor of Latin writes: 'Your medical nomenclature intrigues me greatly as for instance this beautiful word *avitaminosis*. It is a beautiful example of two Greek ends and the middle a sort of imitation Latin'."

Which reminds one that there is a lot of Latin hooked up with Greek roots and *vice versa* in the general as well as in the "medical nomenclature." So, why pick on avitaminosis? It is understandable and that is what words are expected to be. Ever since Aesculapius and Homer, the tongues of Babel have been messed up.

All medical terms do not have as fine pedigrees as *pathologist*, *pediatrist*, *therapeutist*, and other purebred's. We seem to live peacefully with *obstetrlist*, *ovaritis*,

*venereology*, *automobile* and ever-so-many other hybrids. Anyhow, folks talked to one another long before the Greeks and Romans came upon the scene, and in view of what came before and after them, why should their notion of vocal expression be so profoundly consecrated? Our vote goes to English—the most practical of all tongues regardless.

#### Medical News Traveled Slow in the Nineteenth Century

Although Lister announced his method of antiseptic surgery in 1867 and had achieved international acclaim for his work by 1879, Will Mayo appears to have graduated in medicine in 1883 with but a superficial knowledge of Listerism and scant conviction of its merits.—*Excerpt from Science.*

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